

Table 1
Changes in Default Target Levels for Soil
Departmental MRBCA Technical Guidance
Lowest Value of All Pathways

Chemical	CAS #	Lowest CALM STARC*** (mg/kg)	Soil				Ratio of May 2006/Feb. 2005	Why Changed
			DTL Feb. 2005 (mg/kg)	Pathway Feb. 2005	DTL May 2006 (mg/kg)	Pathway May 2006		
Carbon tetrachloride	56-23-5	1.30E-01	7.96E-02	INH	7.96E-02	INH	1.0	=
1,1-Dichloroethane	75-34-3	NIC	1.82E-01	GWP	1.80E-01	GWP	0.99	-
cis-1,2-Dichloroethylene	156-59-2	5.00E-01	5.21E-01	GWP	5.21E-01	GWP	1.0	=
1,2-Dichloropropane	78-87-5	4.00E-02	4.20E-02	GWP	4.20E-02	GWP	1.0	=
1,3-Dichloropropene	542-75-6	4.00E-03	5.17E-02	GWP	5.06E-02	GWP	0.98	-
1,4-Dioxane**	123-91-1	1.00E-02	2.36E-01	GWP	2.35E-01	GWP	0.998	-
Methyl ethyl ketone	78-93-3	7.40E+03	7.31E+00	GWP	7.30E+00	GWP	0.998	-
Methylene chloride	75-09-2	2.00E-02	1.76E-02	GWP	1.76E-02	GWP	1.0	=
Tetrachloroethylene	127-18-4	1.00E-01	1.41E-01	GWP	1.41E-01	GWP	1.0	=
1,1,1-Trichloroethane	71-55-6	3.50E+00	4.24E+00	GWP	4.24E+00	GWP	1.0	=
Trichloroethylene	79-01-6	1.00E-01	1.41E-01	GWP	1.41E-01	GWP	1.0	=
Vinyl chloride	75-01-4	2.00E-02	1.92E-02	GWP	1.92E-02	GWP	1.0	=
Bis(2-ethylhexyl)phthalate	117-81-7	4.10E+02	1.17E+02	DC	3.47E+02	SDC	3.0	+
1,2-Dibromo-3-chloropropane	96-12-8	1.00E-03	1.10E-03	GWP	1.10E-03	GWP	1.0	=
Ethylene glycol**	107-21-1	3.40E+01	6.00E+01	GWP	6.00E+01	GWP	0.999	-
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	4.15E-02	GWP	2.00E-03	GWP	0.05	-
3-Nitroaniline**	99-09-2	NIC	3.37E-02	GWP	3.29E-02	GWP	0.97	-
Pentachlorophenol	87-86-5	7.00E-02	8.94E-02	GWP	8.94E-02	GWP	1.0	=
Polychlorinated biphenyls (PCBs)	1336-36-3	6.00E-01	6.31E-01	DC	2.20E+00	SDC	3.5	+
alpha-Hexachlorocyclohexane	319-84-6	3.20E-04	1.97E-02	GWP	1.27E-02	GWP	0.6	-
Atrazine	1912-24-9	1.80E-01	2.22E-01	GWP	2.22E-01	GWP	1.0	=
Chlordane (technical)	12789-03-6	7.00E+00	4.67E+00	DC	5.40E+00	GWP	1.2	+
DDT	50-29-3	8.00E+00	4.82E+00	DC	1.43E+01	SDC	3.0	+
Diazinon	333-41-5	2.00E-02	4.99E-01	GWP	4.00E-01	GWP	0.8	-
Silvex (2,4,5-TP)	93-72-1	4.00E-01	4.83E-01	GWP	4.83E-01	GWP	1.0	=
Arsenic*	7440-38-2	1.10E+01	4.35E+00	DC	3.89E+00	SDC	0.89	-
Cadmium*	7440-43-9	1.10E+01	1.88E+00	GWP	9.31E+00	GWP	4.9	+
Mercury	7439-97-6	6.00E-01	7.84E-03	INH	2.19E+00	INH	279	+
Cyanide	57-12-5	3.90E+01	7.73E+01	GWP	7.71E+01	GWP	0.998	-

Notes:

CALM: Cleanup levels for Missouri

DC or SDC: Soil direct contact pathway

DTL: Default target level

GWP: Protection of domestic groundwater use pathway

INH: Indoor inhalation pathway

MRBCA: Missouri risk-based corrective action

NIC: Chemical not in CALM

STARC: Soil Target Concentration

*: Chemicals in Tanks program. DTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

**: February 2005 value was in error. Therefore, revised February 2005 value is shown.

***: Lowest value of STARCs (direct exposure for scenarios A, B, and C, and leaching to groundwater)

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

=: May 2006 value is same as February 2005 value.

Table 2
Changes in Default Target Levels for Groundwater
Departmental MRBCA Technical Guidance
Lowest Value of All Pathways

Chemical	CAS #	CALM GTARC (mg/L)	Groundwater				Ratio of May 2006/Feb. 2005	Why Changed
			DTL Feb. 2005 (mg/L)	Pathway Feb. 2005	DTL May 2006 (mg/L)	Pathway May 2006		
Carbon tetrachloride	56-23-5	5.00E-03	5.00E-03	DWG	5.00E-03	DWG	1.0	=
1,1-Dichloroethane	75-34-3	NIC	2.52E-02	DWG	2.49E-02	DWG	0.99	-
cis-1,2-Dichloroethylene	156-59-2	7.00E-02	7.00E-02	DWG	7.00E-02	DWG	1.0	=
1,2-Dichloropropane	78-87-5	5.00E-03	5.00E-03	DWG	5.00E-03	DWG	1.0	=
1,3-Dichloropropene	542-75-6	4.00E-04	4.41E-03	DWG	4.31E-03	DWG	0.98	-
1,4-Dioxane**	123-91-1	3.00E-03	6.11E-02	DWG	6.10E-02	DWG	0.998	-
Methyl ethyl ketone	78-93-3	No GTARC	3.65E+00	DWG	3.64E+00	DWG	0.998	-
Methylene chloride	75-09-2	5.00E-03	5.00E-03	DWG	5.00E-03	DWG	1.0	=
Tetrachloroethylene	127-18-4	5.00E-03	5.00E-03	DWG	5.00E-03	DWG	1.0	=
1,1,1-Trichloroethane	71-55-6	2.00E-01	2.00E-01	DWG	2.00E-01	DWG	1.0	=
Trichloroethylene	79-01-6	5.00E-03	5.00E-03	DWG	5.00E-03	DWG	1.0	=
Vinyl chloride	75-01-4	2.00E-03	2.00E-03	DWG	2.00E-03	DWG	1.0	=
Bis(2-ethylhexyl)phthalate	117-81-7	6.00E-03	6.00E-03	DWG	6.00E-03	DWG	1.0	=
1,2-Dibromo-3-chloropropane	96-12-8	2.00E-04	2.00E-04	DWG	2.00E-04	DWG	1.0	=
Ethylene glycol**	107-21-1	1.40E+01	3.13E+01	DWG	3.13E+01	DWG	0.999	-
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	3.13E-02	DWG	1.51E-03	DWG	0.05	-
3-Nitroaniline**	99-09-2	NIC	4.69E-03	DWG	4.57E-03	DWG	0.97	-
Pentachlorophenol	87-86-5	1.00E-03	1.00E-03	DWG	1.00E-03	DWG	1.0	=
Polychlorinated biphenyls (PCBs)	1336-36-3	5.00E-04	5.00E-04	DWG	6.34E-05	GDC	0.1	-
alpha-Hexachlorocyclohexane	319-84-6	2.20E-06	1.07E-04	DWG	6.88E-05	DWG	0.6	-
Atrazine	1912-24-9	3.00E-03	3.00E-03	DWG	3.00E-03	DWG	1.0	=
Chlordane (technical)	12789-03-6	2.00E-03	1.92E-03	DWG	3.02E-04	DWG	0.2	-
DDT	50-29-3	2.00E-03	1.98E-03	DWG	2.42E-04	DWG	0.1	-
Diazinon	333-41-5	6.00E-04	1.41E-02	DWG	1.13E-02	DWG	0.8	-
Silvex (2,4,5-TP)	93-72-1	5.00E-02	5.00E-02	DWG	5.00E-02	DWG	1.0	=
Arsenic*	7440-38-2	5.00E-02	1.00E-02	DWG	1.00E-02	DWG	1.0	=
Cadmium*	7440-43-9	5.00E-03	5.00E-03	DWG	5.00E-03	DWG	1.0	=
Mercury	7439-97-6	2.00E-03	5.07E-02	INH	5.07E-02	INH	1.0	=
Cyanide	57-12-5	2.00E-01	3.13E-01	DWG	3.12E-01	DWG	0.998	-

Notes:

CALM: Cleanup levels for Missouri

DTL: Default target level

DWG: Domestic water use

GDC: Groundwater dermal contact pathway

GTARC: Groundwater target concentration

INH: Indoor inhalation pathway

MRBCA: Missouri risk-based corrective action

NIC: Chemical not in CALM

*: Chemicals in Tanks program. DTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

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-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

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Table 3
Changes in Risk-Based Target Levels for Residential Land Use, Soil Type 1 (Sandy)
Departmental MRBCA Technical Guidance
Surficial Soil (Ingestion, Inhalation, and Dermal Contact)

Chemical	CAS #	Equivalent CALM (STARCS) Scenario A) (mg/kg)	Surficial Soil (Ingestion, Inhalation, and Dermal Contact) Soil Type 1 (Sandy)		Ratio of May 2006/Feb. 2005	Why Changed	
			RBTL Feb. 2005 (mg/kg)	RBTL May 2006 (mg/kg)			
Carbon tetrachloride	56-23-5	2.00E+00	7.83E+00	4.81E+01	6.1	+	Changes in skin surface area (SA), soil adherence factor (AF), and dermal absorption factor (RAFd)
1,1-Dichloroethane	75-34-3	NIC	9.99E+01	1.06E+03	10.6	+	Changes in SA, AF, RAFd, and inhalation reference dose
cis-1,2-Dichloroethylene	156-59-2	1.20E+03	5.53E+01	6.83E+02	12.4	+	Changes in SA, AF, and RAFd
1,2-Dichloropropane	78-87-5	1.00E+01	7.39E+00	7.55E+01	10.2	+	Changes in SA, AF, and RAFd
1,3-Dichloropropene	542-75-6	9.00E-01	1.37E+01	6.34E+01	4.6	+	Changes in SA, AF, and RAFd
1,4-Dioxane	123-91-1	1.50E+02	9.96E+01	4.00E+02	4.0	+	Changes in SA and AF
Methyl ethyl ketone	78-93-3	7.40E+03	1.10E+04	4.42E+04	4.0	+	Changes in SA, AF, and RAFd
Methylene chloride	75-09-2	5.10E+01	1.67E+02	8.42E+02	5.0	+	Changes in SA, AF, and RAFd
Tetrachloroethylene	127-18-4	4.00E+01	2.48E+01	1.18E+01	0.5	-	Changes in SA, AF, RAFd, and oral/inhalation slope factors
1,1,1-Trichloroethane	71-55-6	1.20E+03	2.36E+03	2.06E+04	8.7	+	Changes in SA, AF, and RAFd
Trichloroethylene	79-01-6	4.00E+01	7.16E+01	4.77E+02	6.7	+	Changes in SA, AF, and RAFd
Vinyl chloride	75-01-4	3.00E-01	1.14E+00	4.56E+00	4.0	+	Changes in SA, AF, and RAFd
Bis(2-ethylhexyl)phthalate	117-81-7	4.10E+02	1.17E+02	3.47E+02	3.0	+	Changes in SA and AF
1,2-Dibromo-3-chloropropane	96-12-8	1.00E+00	1.16E+00	3.37E+00	2.9	+	Changes in SA and AF
Ethylene glycol	107-21-1	1.24E+05	2.94E+04	4.48E+04	1.5	+	Changes in SA and AF
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	3.26E+01	5.73E+00	0.2	-	Changes in SA, AF, and oral reference dose
3-Nitroaniline	99-09-2	NIC	7.44E+00	1.78E+01	2.4	+	Changes in SA and AF
Pentachlorophenol	87-86-5	6.00E+00	6.46E+00	2.97E+01	4.6	+	Changes in SA and AF
Polychlorinated biphenyls (PCBs)	1336-36-3	6.00E-01	6.31E-01	2.20E+00	3.5	+	Changes in SA and AF
alpha-Hexachlorocyclohexane	319-84-6	3.00E-01	2.57E-01	7.47E-01	2.9	+	Changes in SA and AF
Atrazine	1912-24-9	7.00E+00	7.13E+00	2.11E+01	3.0	+	Changes in SA and AF
Chlordane (technical)	12789-03-6	7.00E+00	4.67E+00	1.38E+01	2.9	+	Changes in SA and AF
DDT	50-29-3	8.00E+00	4.82E+00	1.43E+01	3.0	+	Changes in SA and AF
Diazinon	333-41-5	5.90E+01	2.25E+01	5.50E+01	2.4	+	Changes in SA and AF
Silvex (2,4,5-TP)	93-72-1	5.60E+02	1.99E+02	4.89E+02	2.5	+	Changes in SA and AF
Arsenic*	7440-38-2	1.10E+01	4.35E+00	3.89E+00	0.9	-	Changes in SA, AF, and oral absorption factor
Cadmium*	7440-43-9	1.10E+02	3.23E+01	1.68E+01	0.5	-	Changes in SA, AF, RAFd, and oral slope factor
Mercury	7439-97-6	6.00E-01	4.63E-01	4.63E+01	100	+	Changes in SA, AF, and soil-water partition coefficient
Cyanide	57-12-5	5.48E+03	5.02E+02	1.22E+03	2.4	+	Changes in SA and AF

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NIC: Chemical not in CALM

RBTL: Risk-based target level

STARCS: Soil target concentration

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

Table 4
Changes in Risk-Based Target Levels for Residential Land Use, Soil Type 1 (Sandy)
Departmental MRBCA Technical Guidance
Subsurface Soil (Indoor Inhalation)

Chemical	CAS #	Equivalent CALM (mg/kg)	Subsurface Soil (Indoor Inhalation of Vapors) Soil Type 1 (Sandy)		Ratio of May 2006/Feb. 2005	Why Changed
			RBTL Feb. 2005 (mg/kg)	RBTL May 2006 (mg/kg)		
Carbon tetrachloride	56-23-5	NA	7.96E-02	7.96E-02	1.0	=
1,1-Dichloroethane	75-34-3	NA	9.22E-01	9.22E-01	1.0	=
cis-1,2-Dichloroethylene	156-59-2	NIC	1.71E+00	1.71E+00	1.0	=
1,2-Dichloropropane	78-87-5	NA	3.03E-01	3.03E-01	1.0	=
1,3-Dichloropropene	542-75-6	NA	2.24E-01	2.24E-01	1.0	=
1,4-Dioxane	123-91-1	NA	3.83E+01	3.83E+01	1.0	=
Methyl ethyl ketone	78-93-3	NA	3.88E+03	3.88E+03	1.0	=
Methylene chloride	75-09-2	NA	2.86E+00	2.86E+00	1.0	=
Tetrachloroethylene	127-18-4	NA	6.30E-01	3.00E-01	0.5	- Change in inhalation slope factor
1,1,1-Trichloroethane	71-55-6	NA	6.86E+01	6.86E+01	1.0	=
Trichloroethylene	79-01-6	NA	1.46E+00	1.46E+00	1.0	=
Vinyl chloride	75-01-4	NA	3.22E-02	3.22E-02	1.0	=
Bis(2-ethylhexyl)phthalate	117-81-7	NA	6.64E+10	1.02E+10	0.2	- Change in inhalation slope factor
1,2-Dibromo-3-chloropropane	96-12-8	NA	3.75E+02	3.75E+02	1.0	=
Ethylene glycol	107-21-1	NA	1.49E+05	1.49E+05	1.0	=
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	3.40E+02	3.40E+02	1.0	=
3-Nitroaniline	99-09-2	NIC	4.82E+03	5.05E+03	1.05	+ Change in inhalation reference dose
Pentachlorophenol	87-86-5	NA	4.62E+05	4.62E+05	1.0	=
Polychlorinated biphenyls (PCBs)	1336-36-3	NA	1.32E+03	1.32E+03	1.0	=
alpha-Hexachlorocyclohexane	319-84-6	NA	5.69E+01	5.69E+01	1.0	=
Atrazine	1912-24-9	NA	5.20E+04	5.20E+04	1.0	=
Chlordane (technical)	12789-03-6	NA	2.63E+04	2.63E+04	1.0	=
DDT	50-29-3	NA	3.04E+06	3.04E+06	1.0	=
Diazinon	333-41-5	NA	6.29E+04	6.29E+04	1.0	=
Silvex (2,4,5-TP)	93-72-1	NA	2.79E+05	2.79E+05	1.0	=
Arsenic*	7440-38-2	NA	NA	NA	NA	NA
Cadmium*	7440-43-9	NA	NA	NA	NA	NA
Mercury	7439-97-6	NA	7.84E-03	2.19E+00	279	+ Change in soil-water partition coefficient
Cyanide	57-12-5	NA	NA	NA	NA	NA

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NA: Not available

NIC: Chemical not in CALM

RBTL: Risk-based target level

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

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-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

=: May 2006 value is same as February 2005 value.

Table 5
Changes in Risk-Based Target Levels for Residential Land Use, Soil Type 1 (Sandy)
Departmental MRBCA Technical Guidance
Groundwater (Indoor Inhalation)

Chemical	CAS #	Equivalent CALM (mg/L)	Groundwater (Indoor Inhalation of Vapors) Soil Type 1 (Sandy)		Ratio of May 2006/Feb. 2005	Why Changed
			RBTL Feb. 2005 (mg/L)	RBTL May 2006 (mg/L)		
Carbon tetrachloride	56-23-5	NA	7.67E-02	7.67E-02	1.0	=
1,1-Dichloroethane	75-34-3	NA	3.73E+00	3.73E+00	1.0	=
cis-1,2-Dichloroethylene	156-59-2	NIC	6.55E+00	6.55E+00	1.0	=
1,2-Dichloropropane	78-87-5	NA	1.02E+00	1.02E+00	1.0	=
1,3-Dichloropropene	542-75-6	NA	5.96E-01	5.96E-01	1.0	=
1,4-Dioxane	123-91-1	NA	2.50E+02	2.50E+02	1.0	=
Methyl ethyl ketone	78-93-3	NA	4.89E+04	4.89E+04	1.0	=
Methylene chloride	75-09-2	NA	2.27E+01	2.27E+01	1.0	=
Tetrachloroethylene	127-18-4	NA	7.09E-01	3.38E-01	0.5	- Change in inhalation slope factor
1,1,1-Trichloroethane	71-55-6	NA	1.02E+02	1.02E+02	1.0	=
Trichloroethylene	79-01-6	NA	1.60E+00	1.60E+00	1.0	=
Vinyl chloride	75-01-4	NA	1.11E-01	1.11E-01	1.0	=
Bis(2-ethylhexyl)phthalate	117-81-7	NA	7.43E+05	1.14E+05	0.2	- Change in inhalation slope factor
1,2-Dibromo-3-chloropropane	96-12-8	NA	1.71E+03	1.71E+03	1.0	=
Ethylene glycol	107-21-1	NA	1.95E+06	1.95E+06	1.0	=
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	6.44E+03	6.44E+03	1.0	=
3-Nitroaniline	99-09-2	NIC	1.68E+04	1.77E+04	1.05	+ Change in inhalation reference dose
Pentachlorophenol	87-86-5	NA	1.30E+05	1.30E+05	1.0	=
Polychlorinated biphenyls (PCBs)	1336-36-3	NA	7.41E-01	7.41E-01	1.0	=
alpha-Hexachlorocyclohexane	319-84-6	NA	7.76E+00	7.76E+00	1.0	=
Atrazine	1912-24-9	NA	1.77E+04	1.77E+04	1.0	=
Chlordane (technical)	12789-03-6	NA	3.71E+01	3.71E+01	1.0	=
DDT	50-29-3	NA	1.95E+02	1.95E+02	1.0	=
Diazinon	333-41-5	NA	4.47E+04	4.47E+04	1.0	=
Silvex (2,4,5-TP)	93-72-1	NA	7.27E+05	7.27E+05	1.0	=
Arsenic*	7440-38-2	NA	NA	NA	NA	NA
Cadmium*	7440-43-9	NA	NA	NA	NA	NA
Mercury	7439-97-6	NA	5.07E-02	5.07E-02	1.0	=
Cyanide	57-12-5	NA	NA	NA	NA	NA

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NA: Not available

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RBTL: Risk-based target level

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Table 6
Changes in Risk-Based Target Levels for Residential Land Use, Soil Type 1 (Sandy)
Departmental MRBCA Technical Guidance
Groundwater (Dermal Contact)

Chemical	CAS #	Equivalent CALM (mg/L)	Groundwater (Dermal Contact) Soil Type 1 (Sandy)		Ratio of May 2006/Feb. 2005	Why Changed
			RBTL Feb. 2005 (mg/L)	RBTL May 2006 (mg/L)		
Carbon tetrachloride	56-23-5	NA	1.06E-01	4.69E-02	0.4	- Adoption of RAGS Part E
1,1-Dichloroethane	75-34-3	NA	5.77E+00	3.53E+00	0.6	- Adoption of RAGS Part E
cis-1,2-Dichloroethylene	156-59-2	NIC	4.82E+00	4.22E+00	0.9	- Adoption of RAGS Part E
1,2-Dichloropropane	78-87-5	NA	5.21E-01	4.21E-01	0.8	- Adoption of RAGS Part E
1,3-Dichloropropene	542-75-6	NA	5.13E-01	2.99E-01	0.6	- Adoption of RAGS Part E
1,4-Dioxane	123-91-1	NA	6.07E+01	3.93E+01	0.6	- Adoption of RAGS Part E
Methyl ethyl ketone	78-93-3	NA	2.31E+03	2.27E+03	0.98	- Adoption of RAGS Part E
Methylene chloride	75-09-2	NA	8.40E+00	5.54E+00	0.7	- Adoption of RAGS Part E
Tetrachloroethylene	127-18-4	NA	1.28E-01	5.06E-03	0.04	- Adoption of RAGS Part E and change in deraml slope factor
1,1,1-Trichloroethane	71-55-6	NA	7.95E+01	5.64E+01	0.7	- Adoption of RAGS Part E
Trichloroethylene	79-01-6	NA	1.41E+00	7.22E-01	0.5	- Adoption of RAGS Part E
Vinyl chloride	75-01-4	NA	2.81E-02	2.06E-02	0.7	- Adoption of RAGS Part E
Bis(2-ethylhexyl)phthalate	117-81-7	NA	6.30E-01	7.52E-02	0.1	- Adoption of RAGS Part E
1,2-Dibromo-3-chloropropane	96-12-8	NA	3.56E-02	9.82E-03	0.3	- Adoption of RAGS Part E
Ethylene glycol	107-21-1	NA	6.43E+04	6.62E+04	1.03	+ Adoption of RAGS Part E
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	2.38E+00	5.56E-02	0.02	- Adoption of RAGS Part E and change in dermal reference dose
3-Nitroaniline**	99-09-2	NIC	3.53E-01	2.45E-01	0.7	- Adoption of RAGS Part E
Pentachlorophenol	87-86-5	NA	4.71E-03	1.12E-03	0.2	- Adoption of RAGS Part E
Polychlorinated biphenyls (PCBs)	1336-36-3	NA	3.24E-04	6.34E-05	0.2	- Adoption of RAGS Part E
alpha-Hexachlorocyclohexane	319-84-6	NA	1.45E-03	2.90E-04	0.2	- Adoption of RAGS Part E
Atrazine	1912-24-9	NA	1.34E-01	4.23E-02	0.3	- Adoption of RAGS Part E
Chlordane (technical)	12789-03-6	NA	3.45E-03	5.37E-04	0.2	- Adoption of RAGS Part E
DDT	50-29-3	NA	2.40E-03	4.14E-04	0.2	- Adoption of RAGS Part E
Diazinon	333-41-5	NA	2.99E-01	7.71E-02	0.3	- Adoption of RAGS Part E
Silvex (2,4,5-TP)	93-72-1	NA	2.25E+00	7.02E-01	0.3	- Adoption of RAGS Part E
Arsenic*	7440-38-2	NA	NA	1.58E-01	NA	NA Adoption of RAGS Part E
Cadmium*	7440-43-9	NA	NA	6.25E-01	NA	NA Adoption of RAGS Part E
Mercury	7439-97-6	NA	NA	NA	NA	NA
Cyanide	57-12-5	NA	7.39E+01	1.12E+02	1.5	+ Adoption of RAGS Part E and change in skin surface area

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NA: Not available

NIC: Chemical not in CALM

RAGS: Risk assessment guidance for superfund

RBTL: Risk-based target level

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

**: February 2005 value was in error. Therefore, revised February 2005 value is shown.

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

Table 7
Changes in Risk-Based Target Levels for Residential Land Use, Soil Type 1 (Sandy)
Departmental MRBCA Technical Guidance
Groundwater (Domestic Water Use)

Chemical	CAS #	Equivalent CALM (mg/L)	Groundwater (Domestic Water Use) Soil Type 1 (Sandy)		Ratio of May 2006/Feb. 2005	Why Changed
			RBTL Feb. 2005 (mg/L)	RBTL May 2006 (mg/L)		
Carbon tetrachloride	56-23-5	NA	5.00E-03	5.00E-03	1.0	=
1,1-Dichloroethane	75-34-3	NA	2.52E-02	2.49E-02	0.99	-
cis-1,2-Dichloroethylene	156-59-2	NIC	7.00E-02	7.00E-02	1.0	=
1,2-Dichloropropane	78-87-5	NA	5.00E-03	5.00E-03	1.0	=
1,3-Dichloropropene	542-75-6	NA	4.41E-03	4.31E-03	0.98	-
1,4-Dioxane**	123-91-1	NA	6.11E-02	6.10E-02	0.998	-
Methyl ethyl ketone	78-93-3	NA	3.65E+00	3.64E+00	0.998	-
Methylene chloride	75-09-2	NA	5.00E-03	5.00E-03	1.0	=
Tetrachloroethylene	127-18-4	NA	5.00E-03	5.00E-03	1.0	=
1,1,1-Trichloroethane	71-55-6	NA	2.00E-01	2.00E-01	1.0	=
Trichloroethylene	79-01-6	NA	5.00E-03	5.00E-03	1.0	=
Vinyl chloride	75-01-4	NA	2.00E-03	2.00E-03	1.0	=
Bis(2-ethylhexyl)phthalate	117-81-7	NA	6.00E-03	6.00E-03	1.0	=
1,2-Dibromo-3-chloropropane	96-12-8	NA	2.00E-04	2.00E-04	1.0	=
Ethylene glycol**	107-21-1	NA	3.13E+01	3.13E+01	0.999	-
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	3.13E-02	1.51E-03	0.05	-
3-Nitroaniline**	99-09-2	NIC	4.69E-03	4.57E-03	0.97	-
Pentachlorophenol	87-86-5	NA	1.00E-03	1.00E-03	1.0	=
Polychlorinated biphenyls (PCBs)	1336-36-3	NA	5.00E-04	5.00E-04	1.0	=
alpha-Hexachlorocyclohexane	319-84-6	NA	1.07E-04	6.88E-05	0.6	-
Atrazine	1912-24-9	NA	3.00E-03	3.00E-03	1.0	=
Chlordane (technical)	12789-03-6	NA	1.92E-03	3.02E-04	0.2	-
DDT	50-29-3	NA	1.98E-03	2.42E-04	0.1	-
Diazinon	333-41-5	NA	1.41E-02	1.13E-02	0.8	-
Silvex (2,4,5-TP)	93-72-1	NA	5.00E-02	5.00E-02	1.0	=
Arsenic*	7440-38-2	NA	1.00E-02	1.00E-02	1.0	=
Cadmium*	7440-43-9	NA	5.00E-03	5.00E-03	1.0	=
Mercury	7439-97-6	NA	NA	NA	NA	NA
Cyanide	57-12-5	NA	3.13E-01	3.12E-01	0.998	-

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NA: Not available

NIC: Chemical not in CALM

RAGS: Risk assessment guidance for superfund

RBTL: Risk-based target level

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

**: February 2005 value was in error. Therefore, revised February 2005 value is shown.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

=: May 2006 value is same as February 2005 value.

Table 8
Changes in Risk-Based Target Levels for Non-residential Land Use, Soil Type 1 (Sandy)
Departmental MRBCA Technical Guidance
Surficial Soil (Ingestion, Inhalation, and Dermal Contact)

Chemical	CAS #	Equivalent CALM (STARC Scenario B) (mg/kg)	Surficial Soil (Ingestion, Inhalation, and Dermal Contact) Soil Type 1 (Sandy)		Ratio of May 2006/Feb. 2005	Why Changed	
			RBTL Feb. 2005 (mg/kg)	RBTL May 2006 (mg/kg)			
Carbon tetrachloride	56-23-5	3.00E+00	1.94E+01	2.08E+02	10.7	+	Changes in skin surface area (SA), soil adherence factor (AF), and dermal absorption factor (RAFd)
1,1-Dichloroethane	75-34-3	NIC	2.59E+02	4.42E+03	17.1	+	Changes in SA, AF, RAFd, and inhalation reference dose
cis-1,2-Dichloroethylene	156-59-2	1.20E+03	5.21E+02	8.97E+03	17.2	+	Changes in SA, AF, and RAFd
1,2-Dichloropropane	78-87-5	1.40E+01	4.13E+01	6.98E+02	16.9	+	Changes in SA, AF, and RAFd
1,3-Dichloropropene	542-75-6	1.00E+00	3.73E+01	2.81E+02	7.5	+	Changes in SA, AF, and RAFd
1,4-Dioxane	123-91-1	2.10E+02	2.56E+02	1.30E+03	5.1	+	Changes in SA and AF
Methyl ethyl ketone	78-93-3	1.00E+04	7.67E+04	5.79E+05	7.6	+	Changes in SA, AF, and RAFd
Methylene chloride	75-09-2	7.10E+01	4.35E+02	3.70E+03	8.5	+	Changes in SA, AF, and RAFd
Tetrachloroethylene	127-18-4	5.50E+01	6.56E+01	5.27E+01	0.8	-	Changes in SA, AF, RAFd, and oral/inhalation slope factors
1,1,1-Trichloroethane	71-55-6	1.20E+03	2.40E+04	2.69E+05	11.2	+	Changes in SA, AF, and RAFd
Trichloroethylene	79-01-6	5.60E+01	1.67E+02	2.05E+03	12.3	+	Changes in SA, AF, and RAFd
Vinyl chloride	75-01-4	4.00E-01	3.40E+00	2.04E+01	6.0	+	Changes in SA, AF, and RAFd
Bis(2-ethylhexyl)phthalate	117-81-7	5.70E+02	3.58E+02	1.23E+03	3.4	+	Changes in SA and AF
1,2-Dibromo-3-chloropropane	96-12-8	2.00E+00	3.53E+00	1.17E+01	3.3	+	Changes in SA and AF
Ethylene glycol	107-21-1	1.24E+05	2.03E+05	4.99E+05	2.5	+	Changes in SA and AF
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	2.27E+02	5.61E+01	0.2	-	Changes in SA, AF, and oral reference dose
3-Nitroaniline	99-09-2	NIC	5.30E+01	1.77E+02	3.3	+	Changes in SA and AF
Pentachlorophenol	87-86-5	9.00E+00	1.86E+01	9.00E+01	4.8	+	Changes in SA and AF
Polychlorinated biphenyls (PCBs)	1336-36-3	9.00E-01	1.88E+00	7.38E+00	3.9	+	Changes in SA and AF
alpha-Hexachlorocyclohexane	319-84-6	4.00E-01	7.82E-01	2.58E+00	3.3	+	Changes in SA and AF
Atrazine	1912-24-9	1.00E+01	2.18E+01	7.49E+01	3.4	+	Changes in SA and AF
Chlordane (technical)	12789-03-6	1.00E+01	1.43E+01	4.87E+01	3.4	+	Changes in SA and AF
DDT	50-29-3	1.20E+01	1.47E+01	5.07E+01	3.4	+	Changes in SA and AF
Diazinon	333-41-5	5.90E+01	1.60E+02	5.54E+02	3.5	+	Changes in SA and AF
Silvex (2,4,5-TP)	93-72-1	7.90E+02	1.42E+03	4.93E+03	3.5	+	Changes in SA and AF
Arsenic*	7440-38-2	1.10E+01	1.91E+01	1.59E+01	0.8	-	Changes in SA, AF, and oral absorption factor
Cadmium*	7440-43-9	1.50E+02	3.47E+02	7.48E+01	0.2	-	Changes in SA, AF, RAFd, and oral slope factor
Mercury	7439-97-6	8.00E-01	6.30E+00	6.30E+02	100	+	Changes in SA, AF, and soil-water partition coefficient
Cyanide	57-12-5	7.67E+03	3.58E+03	1.23E+04	3.4	+	Changes in SA and AF

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NIC: Chemical not in CALM

RBTL: Risk-based target level

STARC: Soil target concentration

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

Table 9
Changes in Risk-Based Target Levels for Non-residential Land Use, Soil Type 1 (Sandy)
Departmental MRBCA Technical Guidance
Subsurface Soil (Indoor Inhalation)

Chemical	CAS #	Equivalent CALM (mg/kg)	Subsurface Soil (Indoor Inhalation of Vapors) Soil Type 1 (Sandy)		Ratio of May 2006/Feb. 2005	Why Changed
			RBTL Feb. 2005 (mg/kg)	RBTL May 2006 (mg/kg)		
Carbon tetrachloride	56-23-5	NA	4.17E-01	4.17E-01	1.0	=
1,1-Dichloroethane	75-34-3	NA	4.83E+00	4.83E+00	1.0	=
cis-1,2-Dichloroethylene	156-59-2	NIC	1.38E+01	1.38E+01	1.0	=
1,2-Dichloropropane	78-87-5	NA	1.70E+00	1.66E+00	0.97	- Change in inhalation slope factor
1,3-Dichloropropene	542-75-6	NA	1.18E+00	1.18E+00	1.0	=
1,4-Dioxane	123-91-1	NA	2.01E+02	2.01E+02	1.0	=
Methyl ethyl ketone	78-93-3	NA	3.12E+04	3.12E+04	1.0	=
Methylene chloride	75-09-2	NA	1.50E+01	1.50E+01	1.0	=
Tetrachloroethylene	127-18-4	NA	3.30E+00	1.57E+00	0.5	- Change in inhalation slope factor
1,1,1-Trichloroethane	71-55-6	NA	5.51E+02	5.51E+02	1.0	=
Trichloroethylene	79-01-6	NA	7.68E+00	7.68E+00	1.0	=
Vinyl chloride	75-01-4	NA	1.69E-01	1.69E-01	1.0	=
Bis(2-ethylhexyl)phthalate	117-81-7	NA	5.34E+11	5.34E+10	0.1	- Change in inhalation slope factor
1,2-Dibromo-3-chloropropane	96-12-8	NA	1.96E+03	1.96E+03	1.0	=
Ethylene glycol	107-21-1	NA	1.20E+06	1.20E+06	1.0	=
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	2.73E+03	2.73E+03	1.0	=
3-Nitroaniline	99-09-2	NIC	3.87E+04	4.06E+04	1.05	+ Change in inhalation reference dose
Pentachlorophenol	87-86-5	NA	2.42E+06	2.42E+06	1.0	=
Polychlorinated biphenyls (PCBs)	1336-36-3	NA	6.94E+03	6.94E+03	1.0	=
alpha-Hexachlorocyclohexane	319-84-6	NA	2.98E+02	2.98E+02	1.0	=
Atrazine	1912-24-9	NA	2.73E+05	2.73E+05	1.0	=
Chlordane (technical)	12789-03-6	NA	1.38E+05	1.38E+05	1.0	=
DDT	50-29-3	NA	1.59E+07	1.59E+07	1.0	=
Diazinon	333-41-5	NA	5.06E+05	5.06E+05	1.0	=
Silvex (2,4,5-TP)	93-72-1	NA	2.25E+06	2.25E+06	1.0	=
Arsenic*	7440-38-2	NA	NA	NA	NA	NA
Cadmium*	7440-43-9	NA	NA	NA	NA	NA
Mercury	7439-97-6	NA	6.30E-02	1.76E+01	279	+ Change in soil-water partition coefficient
Cyanide	57-12-5	NA	NA	NA	NA	NA

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NA: Not available

NIC: Chemical not in CALM

RBTL: Risk-based target level

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

=: May 2006 value is same as February 2005 value.

Table 10
Changes in Risk-Based Target Levels for Non-residential Land Use, Soil Type 1 (Sandy)
Departmental MRBCA Technical Guidance
Groundwater (Indoor Inhalation)

Chemical	CAS #	Equivalent CALM (mg/L)	Groundwater (Indoor Inhalation of Vapors) Soil Type 1 (Sandy)		Ratio of May 2006/Feb. 2005	Why Changed
			RBTL Feb. 2005 (mg/L)	RBTL May 2006 (mg/L)		
Carbon tetrachloride	56-23-5	NA	4.02E-01	4.02E-01	1.0	=
1,1-Dichloroethane	75-34-3	NA	1.95E+01	1.95E+01	1.0	=
cis-1,2-Dichloroethylene	156-59-2	NIC	5.27E+01	5.27E+01	1.0	=
1,2-Dichloropropane	78-87-5	NA	5.76E+00	5.60E+00	0.97	- Change in inhalation slope factor
1,3-Dichloropropene	542-75-6	NA	3.12E+00	3.12E+00	1.0	=
1,4-Dioxane	123-91-1	NA	1.31E+03	1.31E+03	1.0	=
Methyl ethyl ketone	78-93-3	NA	3.93E+05	3.93E+05	1.0	=
Methylene chloride	75-09-2	NA	1.19E+02	1.19E+02	1.0	=
Tetrachloroethylene	127-18-4	NA	3.72E+00	1.77E+00	0.5	- Change in inhalation slope factor
1,1,1-Trichloroethane	71-55-6	NA	8.22E+02	8.22E+02	1.0	=
Trichloroethylene	79-01-6	NA	8.41E+00	8.41E+00	1.0	=
Vinyl chloride	75-01-4	NA	5.82E-01	5.82E-01	1.0	=
Bis(2-ethylhexyl)phthalate	117-81-7	NA	5.97E+06	5.97E+05	0.1	- Change in inhalation slope factor
1,2-Dibromo-3-chloropropane	96-12-8	NA	8.94E+03	8.94E+03	1.0	=
Ethylene glycol	107-21-1	NA	1.57E+07	1.57E+07	1.0	=
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	5.18E+04	5.18E+04	1.0	=
3-Nitroaniline	99-09-2	NIC	1.35E+05	1.42E+05	1.05	+ Change in inhalation reference dose
Pentachlorophenol	87-86-5	NA	6.81E+05	6.81E+05	1.0	=
Polychlorinated biphenyls (PCBs)	1336-36-3	NA	3.88E+00	3.88E+00	1.0	=
alpha-Hexachlorocyclohexane	319-84-6	NA	4.07E+01	4.07E+01	1.0	=
Atrazine	1912-24-9	NA	9.25E+04	9.25E+04	1.0	=
Chlordane (technical)	12789-03-6	NA	1.94E+02	1.94E+02	1.0	=
DDT	50-29-3	NA	1.02E+03	1.02E+03	1.0	=
Diazinon	333-41-5	NA	3.59E+05	3.59E+05	1.0	=
Silvex (2,4,5-TP)	93-72-1	NA	5.85E+06	5.85E+06	1.0	=
Arsenic*	7440-38-2	NA	NA	NA	NA	NA
Cadmium*	7440-43-9	NA	NA	NA	NA	NA
Mercury	7439-97-6	NA	4.07E-01	4.07E-01	1.0	=
Cyanide	57-12-5	NA	NA	NA	NA	NA

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NA: Not available

NIC: Chemical not in CALM

RBTL: Risk-based target level

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

=: May 2006 value is same as February 2005 value.

Table 11
Changes in Risk-Based Target Levels for Non-residential Land Use, Soil Type 1 (Sandy)
Departmental MRBCA Technical Guidance
Groundwater (Dermal Contact)

Chemical	CAS #	Equivalent CALM (mg/L)	Groundwater (Dermal Contact) Soil Type 1 (Sandy)		Ratio of May 2006/Feb. 2005	Why Changed
			RBTL Feb. 2005 (mg/L)	RBTL May 2006 (mg/L)		
Carbon tetrachloride	56-23-5	NA	2.92E-01	1.71E-01	0.6	- Adoption of RAGS Part E
1,1-Dichloroethane	75-34-3	NA	1.59E+01	1.29E+01	0.8	- Adoption of RAGS Part E
cis-1,2-Dichloroethylene	156-59-2	NIC	2.83E+01	2.34E+01	0.8	- Adoption of RAGS Part E
1,2-Dichloropropane	78-87-5	NA	2.16E+00	1.65E+00	0.8	- Adoption of RAGS Part E
1,3-Dichloropropene	542-75-6	NA	1.41E+00	1.09E+00	0.8	- Adoption of RAGS Part E
1,4-Dioxane	123-91-1	NA	1.67E+02	1.44E+02	0.9	- Adoption of RAGS Part E
Methyl ethyl ketone	78-93-3	NA	1.36E+04	1.26E+04	0.9	- Adoption of RAGS Part E
Methylene chloride	75-09-2	NA	2.31E+01	2.02E+01	0.9	- Adoption of RAGS Part E
Tetrachloroethylene	127-18-4	NA	3.54E-01	1.85E-02	0.1	- Adoption of RAGS Part E and change in dermal slope factor
1,1,1-Trichloroethane	71-55-6	NA	4.67E+02	3.13E+02	0.7	- Adoption of RAGS Part E
Trichloroethylene	79-01-6	NA	3.89E+00	2.64E+00	0.7	- Adoption of RAGS Part E
Vinyl chloride	75-01-4	NA	7.74E-02	7.53E-02	1.0	- Adoption of RAGS Part E
Bis(2-ethylhexyl)phthalate	117-81-7	NA	1.73E+00	2.75E-01	0.2	- Adoption of RAGS Part E
1,2-Dibromo-3-chloropropane	96-12-8	NA	9.81E-02	3.59E-02	0.4	- Adoption of RAGS Part E
Ethylene glycol	107-21-1	NA	3.77E+05	3.67E+05	1.0	- Adoption of RAGS Part E
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	1.40E+01	3.08E-01	0.02	- Adoption of RAGS Part E and change in dermal reference dose
3-Nitroaniline**	99-09-2	NIC	2.07E+00	1.36E+00	0.7	- Adoption of RAGS Part E
Pentachlorophenol	87-86-5	NA	1.30E-02	4.08E-03	0.3	- Adoption of RAGS Part E
Polychlorinated biphenyls (PCBs)	1336-36-3	NA	8.91E-04	2.31E-04	0.3	- Adoption of RAGS Part E
alpha-Hexachlorocyclohexane	319-84-6	NA	3.99E-03	1.06E-03	0.3	- Adoption of RAGS Part E
Atrazine	1912-24-9	NA	3.70E-01	1.55E-01	0.4	- Adoption of RAGS Part E
Chlordane (technical)	12789-03-6	NA	9.50E-03	1.96E-03	0.2	- Adoption of RAGS Part E
DDT	50-29-3	NA	6.61E-03	1.51E-03	0.2	- Adoption of RAGS Part E
Diazinon	333-41-5	NA	1.76E+00	4.27E-01	0.2	- Adoption of RAGS Part E
Silvex (2,4,5-TP)	93-72-1	NA	1.32E+01	3.89E+00	0.3	- Adoption of RAGS Part E
Arsenic*	7440-38-2	NA	NA	5.78E-01	NA	Adoption of RAGS Part E
Cadmium*	7440-43-9	NA	NA	2.28E+00	NA	Adoption of RAGS Part E
Mercury	7439-97-6	NA	NA	NA	NA	
Cyanide	57-12-5	NA	4.34E+02	6.19E+02	1.4	+ Adoption of RAGS Part E and change in skin surface area

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NA: Not available

NIC: Chemical not in CALM

RAGS: Risk assessment guidance for superfund

RBTL: Risk-based target level

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

**: February 2005 value was in error. Therefore, revised February 2005 value is shown.

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

Table 12
Changes in Risk-Based Target Levels for Construction Worker, Soil Type 1 (Sandy)
Departmental MRBCA Technical Guidance
Soil (Ingestion, Inhalation, and Dermal Contact)

Chemical	CAS #	Equivalent CALM (mg/kg)	Soil (Ingestion, Inhalation, and Dermal Contact) Soil Type 1 (Sandy)		Ratio of May 2006/Feb. 2005	Why Changed	
			RBTL Feb. 2005 (mg/kg)	RBTL May 2006 (mg/kg)			
Carbon tetrachloride	56-23-5	NA	8.54E+01	1.18E+03	13.8	+	Changes in skin SA, soil AF, IR, and dermal absorption factor (RAFd)
1,1-Dichloroethane	75-34-3	NA	1.35E+03	3.48E+03	2.6	+	Changes in SA, AF, RAFd, and inhalation reference dose (RfDi)
cis-1,2-Dichloroethylene	156-59-2	NIC	1.28E+02	2.31E+03	18.1	+	Changes in SA, AF, and RAFd
1,2-Dichloropropane	78-87-5	NA	1.81E+01	2.64E+02	14.6	+	Changes in skin SA, soil AF, IR, RAFd, and RfDi
1,3-Dichloropropene	542-75-6	NA	4.89E+01	1.42E+03	28.9	+	Changes in skin SA, soil AF, IR, RAFd, and RfDi
1,4-Dioxane	123-91-1	NA	3.59E+03	6.10E+03	1.7	+	Changes in SA and AF
Methyl ethyl ketone	78-93-3	NA	5.98E+04	2.97E+05	5.0	+	Changes in SA, AF, and RAFd
Methylene chloride	75-09-2	NA	1.16E+03	2.46E+04	21.3	+	Changes in SA, AF, and RAFd
Tetrachloroethylene	127-18-4	NA	7.55E+02	2.56E+03	3.4	+	Changes in SA, AF, IR, RAFd, and oral/inhalation/dermal slope factors
1,1,1-Trichloroethane	71-55-6	NA	6.30E+03	1.32E+05	21.0	+	Changes in SA, AF, and RAFd
Trichloroethylene	79-01-6	NA	1.47E+03	2.16E+04	14.7	+	Changes in SA, AF, and RAFd
Vinyl chloride	75-01-4	NA	7.61E+01	1.14E+03	14.9	+	Changes in SA, AF, and RAFd
Bis(2-ethylhexyl)phthalate	117-81-7	NA	9.93E+03	2.85E+04	2.9	+	Changes in SA and AF
1,2-Dibromo-3-chloropropane	96-12-8	NA	2.53E+01	4.91E+01	1.9	+	Change in SA, AF, IR, and RfDi
Ethylene glycol	107-21-1	NA	1.16E+05	7.87E+04	0.7	-	Changes in SA and AF
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	1.47E+02	6.08E+01	0.4	-	Changes in SA, AF, and oral/dermal reference doses
3-Nitroaniline	99-09-2	NIC	1.32E+02	2.74E+02	2.1	+	Changes in SA, AF, and RfDi
Pentachlorophenol	87-86-5	NA	1.29E+03	4.77E+03	3.7	+	Changes in SA and AF
Polychlorinated biphenyls (PCBs)	1336-36-3	NA	1.28E+02	3.78E+02	2.9	+	Changes in SA and AF
alpha-Hexachlorocyclohexane	319-84-6	NA	4.71E+01	8.82E+01	1.9	+	Changes in SA and AF
Atrazine	1912-24-9	NA	1.51E+03	4.34E+03	2.9	+	Changes in SA and AF
Chlordane (technical)	12789-03-6	NA	2.29E+02	5.12E+02	2.2	+	Changes in SA and AF
DDT	50-29-3	NA	2.48E+02	7.13E+02	2.9	+	Changes in SA and AF
Diazinon	333-41-5	NA	4.22E+02	1.28E+03	3.0	+	Changes in SA and AF
Silvex (2,4,5-TP)	93-72-1	NA	3.67E+03	1.14E+04	3.1	+	Changes in SA and AF
Arsenic*	7440-38-2	NA	8.54E+02	6.54E+02	0.8	-	Changes in SA, AF, and oral absorption factor
Cadmium*	7440-43-9	NA	9.65E+02	2.81E+03	2.9	+	Changes in SA, AF, RAFd, and oral slope factor
Mercury	7439-97-6	NA	8.23E-01	2.16E+01	26.2	+	Changes in SA, AF, and soil-water partition coefficient
Cyanide	57-12-5	NA	9.93E+03	2.85E+04	2.9	+	Changes in SA and AF

Notes:

AF: Adherence factor

CALM: Cleanup levels for Missouri

IR: Inhalation rate

MRBCA: Missouri risk-based corrective action

NA: Not available

NIC: Chemical not in CALM

RBTL: Risk-based target level

SA: Skin surface area

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

Table 13
Changes in Risk-Based Target Levels for Construction Worker, Soil Type 1 (Sandy)
Departmental MRBCA Technical Guidance
Groundwater (Outdoor Inhalation)

Chemical	CAS #	Equivalent CALM (mg/L)	Groundwater (Outdoor Inhalation of Vapors) Soil Type 1 (Sandy)		Ratio of May 2006/Feb. 2005	Why Changed
			RBTL Feb. 2005 (mg/L)	RBTL May 2006 (mg/L)		
Carbon tetrachloride	56-23-5	NA	7.60E+03	4.69E+03	0.6	- Change in inhalation rate (IR)
1,1-Dichloroethane	75-34-3	NA	2.87E+05	1.98E+04	0.1	- Changes in IR and inhalation reference dose (RfDi)
cis-1,2-Dichloroethylene	156-59-2	NIC	2.68E+04	1.66E+04	0.6	- Change in IR
1,2-Dichloropropane	78-87-5	NA	4.08E+03	2.52E+03	0.6	- Change in IR
1,3-Dichloropropene	542-75-6	NA	7.02E+03	4.33E+03	0.6	- Changes in IR and RfDi
1,4-Dioxane	123-91-1	NA	2.50E+06	1.55E+06	0.6	- Change in IR
Methyl ethyl ketone	78-93-3	NA	3.51E+07	2.16E+07	0.6	- Change in IR
Methylene chloride	75-09-2	NA	3.47E+05	2.14E+05	0.6	- Change in IR
Tetrachloroethylene	127-18-4	NA	7.76E+04	2.28E+04	0.3	- Changes in IR and inhalation slope factor
1,1,1-Trichloroethane	71-55-6	NA	6.81E+05	4.20E+05	0.6	- Change in IR
Trichloroethylene	79-01-6	NA	1.59E+05	9.79E+04	0.6	- Change in IR
Vinyl chloride	75-01-4	NA	1.39E+04	8.59E+03	0.6	- Change in IR
Bis(2-ethylhexyl)phthalate	117-81-7	NA	4.35E+08	2.69E+08	0.6	- Change in IR
1,2-Dibromo-3-chloropropane	96-12-8	NA	2.23E+06	1.15E+06	0.5	- Changes in IR and RfDi
Ethylene glycol	107-21-1	NA	1.14E+09	7.06E+08	0.6	- Change in IR
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	3.77E+06	2.33E+06	0.6	- Change in IR
3-Nitroaniline	99-09-2	NIC	9.87E+06	6.39E+06	0.6	- Changes in IR and RfDi
Pentachlorophenol	87-86-5	NA	9.56E+08	5.90E+08	0.6	- Change in IR
Polychlorinated biphenyls (PCBs)	1336-36-3	NA	1.54E+04	9.48E+03	0.6	- Change in IR
alpha-Hexachlorocyclohexane	319-84-6	NA	3.36E+04	4.61E+04	1.4	+ Changes in IR and RfDi
Atrazine	1912-24-9	NA	1.68E+08	1.04E+08	0.6	- Change in IR
Chlordane (technical)	12789-03-6	NA	3.75E+04	2.31E+04	0.6	- Change in IR
DDT	50-29-3	NA	4.57E+05	2.82E+05	0.6	- Change in IR
Diazinon	333-41-5	NA	2.62E+07	1.61E+07	0.6	- Change in IR
Silvex (2,4,5-TP)	93-72-1	NA	4.26E+08	2.63E+08	0.6	- Change in IR
Arsenic*	7440-38-2	NA	NA	NA	NA	NA
Cadmium*	7440-43-9	NA	NA	NA	NA	NA
Mercury	7439-97-6	NA	2.72E+02	1.68E+02	0.6	- Change in IR
Cyanide	57-12-5	NA	NA	NA	NA	NA

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NA: Not available

NIC: Chemical not in CALM

RBTL: Risk-based target level

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

Table 14
Changes in Risk-Based Target Levels for Construction Worker, Soil Type 1 (Sandy)
Departmental MRBCA Technical Guidance
Groundwater (Dermal Contact)

Chemical	CAS #	Equivalent CALM (mg/L)	Groundwater (Dermal Contact) Soil Type 1 (Sandy)		Ratio of May 2006/Feb. 2005	Why Changed
			RBTL Feb. 2005 (mg/L)	RBTL May 2006 (mg/L)		
Carbon tetrachloride	56-23-5	NA	2.63E+00	1.55E+00	0.6	- Adoption of RAGS Part E
1,1-Dichloroethane	75-34-3	NA	8.99E+02	7.30E+02	0.8	- Adoption of RAGS Part E
cis-1,2-Dichloroethylene	156-59-2	NIC	7.85E+01	6.50E+01	0.8	- Adoption of RAGS Part E
1,2-Dichloropropane	78-87-5	NA	8.49E+00	6.48E+00	0.8	- Adoption of RAGS Part E
1,3-Dichloropropene	542-75-6	NA	9.80E+01	7.58E+01	0.8	- Adoption of RAGS Part E
1,4-Dioxane	123-91-1	NA	1.16E+04	9.97E+03	0.9	- Adoption of RAGS Part E
Methyl ethyl ketone	78-93-3	NA	3.76E+04	3.50E+04	0.9	- Adoption of RAGS Part E
Methylene chloride	75-09-2	NA	1.03E+03	9.03E+02	0.9	- Adoption of RAGS Part E
Tetrachloroethylene	127-18-4	NA	1.82E+01	1.28E+00	0.1	- Adoption of RAGS Part E and change in dermal slope factor
1,1,1-Trichloroethane	71-55-6	NA	1.30E+03	8.68E+02	0.7	- Adoption of RAGS Part E
Trichloroethylene	79-01-6	NA	2.70E+02	1.83E+02	0.7	- Adoption of RAGS Part E
Vinyl chloride	75-01-4	NA	5.38E+00	5.23E+00	1.0	- Adoption of RAGS Part E
Bis(2-ethylhexyl)phthalate	117-81-7	NA	4.82E+01	7.63E+00	0.2	- Adoption of RAGS Part E
1,2-Dibromo-3-chloropropane	96-12-8	NA	7.77E-01	2.84E-01	0.4	- Adoption of RAGS Part E
Ethylene glycol	107-21-1	NA	1.05E+06	1.02E+06	1.0	- Adoption of RAGS Part E
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	3.89E+01	8.56E-01	0.02	- Adoption of RAGS Part E and change in deramrl reference dose
3-Nitroaniline**	99-09-2	NIC	5.75E+00	3.77E+00	0.7	- Adoption of RAGS Part E
Pentachlorophenol	87-86-5	NA	9.01E-01	2.84E-01	0.3	- Adoption of RAGS Part E
Polychlorinated biphenyls (PCBs)	1336-36-3	NA	6.19E-02	1.61E-02	0.3	- Adoption of RAGS Part E
alpha-Hexachlorocyclohexane	319-84-6	NA	2.77E-01	7.36E-02	0.3	- Adoption of RAGS Part E
Atrazine	1912-24-9	NA	2.57E+01	1.07E+01	0.4	- Adoption of RAGS Part E
Chlordane (technical)	12789-03-6	NA	1.65E-01	3.40E-02	0.2	- Adoption of RAGS Part E
DDT	50-29-3	NA	1.12E-01	2.55E-02	0.2	- Adoption of RAGS Part E
Diazinon	333-41-5	NA	4.88E+00	1.19E+00	0.2	- Adoption of RAGS Part E
Silvex (2,4,5-TP)	93-72-1	NA	3.66E+01	1.08E+01	0.3	- Adoption of RAGS Part E
Arsenic*	7440-38-2	NA	NA	2.58E+01	NA	Adoption of RAGS Part E
Cadmium*	7440-43-9	NA	NA	8.60E+01	NA	Adoption of RAGS Part E
Mercury	7439-97-6	NA	NA	NA	NA	
Cyanide	57-12-5	NA	1.20E+03	1.72E+03	1.4	+ Adoption of RAGS Part E and change in skin surface area

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NA: Not available

NIC: Chemical not in CALM

RAGS: Risk assessment guidance for superfund

RBTL: Risk-based target level

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

**: February 2005 value was in error. Therefore, revised February 2005 value is shown.

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

Table 15
Changes in Risk-Based Target Levels for Residential Land Use, Soil Type 2 (Silty)
Departmental MRBCA Technical Guidance
Surficial Soil (Ingestion, Inhalation, and Dermal Contact)

Chemical	CAS #	Equivalent CALM (STARC Scenario A) (mg/kg)	Surficial Soil (Ingestion, Inhalation, and Dermal Contact) Soil Type 2 (Silty)		Ratio of May 2006/Feb. 2005	Why Changed	
			RBTL Feb. 2005 (mg/kg)	RBTL May 2006 (mg/kg)			
Carbon tetrachloride	56-23-5	2.00E+00	8.03E+00	4.81E+01	6.0	+	Changes in skin surface area (SA), soil adherence factor (AF), and dermal absorption factor (RAFd)
1,1-Dichloroethane	75-34-3	NIC	1.20E+02	1.06E+03	8.8	+	Changes in SA, AF, RAFd, and inhalation reference dose
cis-1,2-Dichloroethylene	156-59-2	1.20E+03	7.49E+01	6.83E+02	9.1	+	Changes in SA, AF, and RAFd
1,2-Dichloropropane	78-87-5	1.00E+01	9.75E+00	7.55E+01	7.7	+	Changes in SA, AF, and RAFd
1,3-Dichloropropene	542-75-6	9.00E-01	1.37E+01	6.34E+01	4.6	+	Changes in SA, AF, and RAFd
1,4-Dioxane	123-91-1	1.50E+02	1.14E+02	4.00E+02	3.5	+	Changes in SA and AF
Methyl ethyl ketone	78-93-3	7.40E+03	1.25E+04	4.42E+04	3.5	+	Changes in SA, AF, and RAFd
Methylene chloride	75-09-2	5.10E+01	1.67E+02	8.42E+02	5.0	+	Changes in SA, AF, and RAFd
Tetrachloroethylene	127-18-4	4.00E+01	2.48E+01	1.18E+01	0.5	-	Changes in SA, AF, RAFd, and oral/inhalation slope factors
1,1,1-Trichloroethane	71-55-6	1.20E+03	2.94E+03	2.06E+04	7.0	+	Changes in SA, AF, and RAFd
Trichloroethylene	79-01-6	4.00E+01	7.16E+01	4.77E+02	6.7	+	Changes in SA, AF, and RAFd
Vinyl chloride	75-01-4	3.00E-01	1.14E+00	4.56E+00	4.0	+	Changes in SA, AF, and RAFd
Bis(2-ethylhexyl)phthalate	117-81-7	4.10E+02	1.17E+02	3.47E+02	3.0	+	Changes in SA and AF
1,2-Dibromo-3-chloropropane	96-12-8	1.00E+00	1.15E+00	3.25E+00	2.8	+	Changes in SA and AF
Ethylene glycol	107-21-1	1.24E+05	2.49E+04	4.10E+04	1.6	+	Changes in SA and AF
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	2.40E+01	5.40E+00	0.2	-	Changes in SA, AF, and oral reference dose
3-Nitroaniline	99-09-2	NIC	7.30E+00	1.71E+01	2.3	+	Changes in SA and AF
Pentachlorophenol	87-86-5	6.00E+00	6.46E+00	2.97E+01	4.6	+	Changes in SA and AF
Polychlorinated biphenyls (PCBs)	1336-36-3	6.00E-01	6.31E-01	2.21E+00	3.5	+	Changes in SA and AF
alpha-Hexachlorocyclohexane	319-84-6	3.00E-01	2.58E-01	7.51E-01	2.9	+	Changes in SA and AF
Atrazine	1912-24-9	7.00E+00	7.13E+00	2.11E+01	3.0	+	Changes in SA and AF
Chlordane (technical)	12789-03-6	7.00E+00	4.68E+00	1.38E+01	3.0	+	Changes in SA and AF
DDT	50-29-3	8.00E+00	4.82E+00	1.43E+01	3.0	+	Changes in SA and AF
Diazinon	333-41-5	5.90E+01	2.23E+01	5.50E+01	2.5	+	Changes in SA and AF
Silvex (2,4,5-TP)	93-72-1	5.60E+02	1.97E+02	4.89E+02	2.5	+	Changes in SA and AF
Arsenic*	7440-38-2	1.10E+01	4.35E+00	3.89E+00	0.9	-	Changes in SA, AF, and oral absorption factor
Cadmium*	7440-43-9	1.10E+02	3.23E+01	1.68E+01	0.5	-	Changes in SA, AF, RAFd, and oral slope factor
Mercury	7439-97-6	6.00E-01	6.92E-01	4.63E+01	66.9	+	Changes in SA, AF, and soil-water partition coefficient
Cyanide	57-12-5	5.48E+03	5.02E+02	1.22E+03	2.4	+	Changes in SA and AF

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NIC: Chemical not in CALM

RBTL: Risk-based target level

STARC: Soil target concentration

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

Table 16
Changes in Risk-Based Target Levels for Residential Land Use, Soil Type 2 (Silty)
Departmental MRBCA Technical Guidance
Subsurface Soil (Indoor Inhalation)

Chemical	CAS #	Equivalent CALM (mg/kg)	Subsurface Soil (Indoor Inhalation of Vapors) Soil Type 2 (Silty)		Ratio of May 2006/Feb. 2005	Why Changed
			RBTL Feb. 2005 (mg/kg)	RBTL May 2006 (mg/kg)		
Carbon tetrachloride	56-23-5	NA	1.56E-01	1.56E-01	1.0	=
1,1-Dichloroethane	75-34-3	NA	2.09E+00	2.09E+00	1.0	=
cis-1,2-Dichloroethylene	156-59-2	NIC	3.87E+00	3.87E+00	1.0	=
1,2-Dichloropropane	78-87-5	NA	6.74E-01	6.74E-01	1.0	=
1,3-Dichloropropene	542-75-6	NA	4.68E-01	4.68E-01	1.0	=
1,4-Dioxane	123-91-1	NA	9.68E+01	9.68E+01	1.0	=
Methyl ethyl ketone	78-93-3	NA	1.28E+04	1.28E+04	1.0	=
Methylene chloride	75-09-2	NA	7.69E+00	7.69E+00	1.0	=
Tetrachloroethylene	127-18-4	NA	1.25E+00	5.94E-01	0.5	- Change in inhalation slope factor
1,1,1-Trichloroethane	71-55-6	NA	1.38E+02	1.38E+02	1.0	=
Trichloroethylene	79-01-6	NA	2.92E+00	2.92E+00	1.0	=
Vinyl chloride	75-01-4	NA	6.74E-02	6.74E-02	1.0	=
Bis(2-ethylhexyl)phthalate	117-81-7	NA	2.60E+10	3.99E+09	0.2	- Change in inhalation slope factor
1,2-Dibromo-3-chloropropane	96-12-8	NA	7.52E+01	7.52E+01	1.0	=
Ethylene glycol	107-21-1	NA	7.27E+04	7.27E+04	1.0	=
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	8.35E+01	8.35E+01	1.0	=
3-Nitroaniline	99-09-2	NIC	7.22E+02	7.57E+02	1.05	+ Change in inhalation reference dose
Pentachlorophenol	87-86-5	NA	8.58E+04	8.58E+04	1.0	=
Polychlorinated biphenyls (PCBs)	1336-36-3	NA	2.52E+03	2.52E+03	1.0	=
alpha-Hexachlorocyclohexane	319-84-6	NA	8.83E+01	8.83E+01	1.0	=
Atrazine	1912-24-9	NA	6.61E+03	6.61E+03	1.0	=
Chlordane (technical)	12789-03-6	NA	4.83E+04	4.83E+04	1.0	=
DDT	50-29-3	NA	4.76E+06	4.76E+06	1.0	=
Diazinon	333-41-5	NA	1.58E+04	1.58E+04	1.0	=
Silvex (2,4,5-TP)	93-72-1	NA	3.85E+04	3.85E+04	1.0	=
Arsenic*	7440-38-2	NA	NA	NA	NA	NA
Cadmium*	7440-43-9	NA	NA	NA	NA	NA
Mercury	7439-97-6	NA	1.90E-02	4.17E+00	220	+ Change in soil-water partition coefficient
Cyanide	57-12-5	NA	NA	NA	NA	NA

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NA: Not available

NIC: Chemical not in CALM

RBTL: Risk-based target level

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

=: May 2006 value is same as February 2005 value.

Table 17
Changes in Risk-Based Target Levels for Residential Land Use, Soil Type 2 (Silty)
Departmental MRBCA Technical Guidance
Groundwater (Indoor Inhalation)

Chemical	CAS #	Equivalent CALM (mg/L)	Groundwater (Indoor Inhalation of Vapors) Soil Type 2 (Silty)		Ratio of May 2006/Feb. 2005	Why Changed
			RBTL Feb. 2005 (mg/L)	RBTL May 2006 (mg/L)		
Carbon tetrachloride	56-23-5	NA	1.28E-01	1.28E-01	1.0	=
1,1-Dichloroethane	75-34-3	NA	6.53E+00	6.53E+00	1.0	=
cis-1,2-Dichloroethylene	156-59-2	NIC	1.16E+01	1.16E+01	1.0	=
1,2-Dichloropropane	78-87-5	NA	1.82E+00	1.82E+00	1.0	=
1,3-Dichloropropene	542-75-6	NA	1.01E+00	1.01E+00	1.0	=
1,4-Dioxane	123-91-1	NA	4.56E+02	4.56E+02	1.0	=
Methyl ethyl ketone	78-93-3	NA	9.20E+04	9.20E+04	1.0	=
Methylene chloride	75-09-2	NA	4.08E+01	4.08E+01	1.0	=
Tetrachloroethylene	127-18-4	NA	1.19E+00	5.68E-01	0.5	- Change in inhalation slope factor
1,1,1-Trichloroethane	71-55-6	NA	1.72E+02	1.72E+02	1.0	=
Trichloroethylene	79-01-6	NA	2.74E+00	2.74E+00	1.0	=
Vinyl chloride	75-01-4	NA	1.83E-01	1.83E-01	1.0	=
Bis(2-ethylhexyl)phthalate	117-81-7	NA	2.91E+05	4.47E+04	0.2	- Change in inhalation slope factor
1,2-Dibromo-3-chloropropane	96-12-8	NA	2.70E+02	2.70E+02	1.0	=
Ethylene glycol	107-21-1	NA	5.37E+05	5.37E+05	1.0	=
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	7.45E+02	7.45E+02	1.0	=
3-Nitroaniline	99-09-2	NIC	2.09E+03	2.19E+03	1.05	+ Change in inhalation reference dose
Pentachlorophenol	87-86-5	NA	2.37E+04	2.37E+04	1.0	=
Polychlorinated biphenyls (PCBs)	1336-36-3	NA	1.39E+00	1.39E+00	1.0	=
alpha-Hexachlorocyclohexane	319-84-6	NA	1.19E+01	1.19E+01	1.0	=
Atrazine	1912-24-9	NA	2.20E+03	2.20E+03	1.0	=
Chlordane (technical)	12789-03-6	NA	6.80E+01	6.80E+01	1.0	=
DDT	50-29-3	NA	3.06E+02	3.06E+02	1.0	=
Diazinon	333-41-5	NA	1.08E+04	1.08E+04	1.0	=
Silvex (2,4,5-TP)	93-72-1	NA	8.68E+04	8.68E+04	1.0	=
Arsenic*	7440-38-2	NA	NA	NA	NA	NA
Cadmium*	7440-43-9	NA	NA	NA	NA	NA
Mercury	7439-97-6	NA	8.77E-02	8.77E-02	1.0	=
Cyanide	57-12-5	NA	NA	NA	NA	NA

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NA: Not available

NIC: Chemical not in CALM

RBTL: Risk-based target level

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

=: May 2006 value is same as February 2005 value.

Table 18
Changes in Risk-Based Target Levels for Residential Land Use, Soil Type 2 (Silty)
Departmental MRBCA Technical Guidance
Groundwater (Dermal Contact)

Chemical	CAS #	Equivalent CALM (mg/L)	Groundwater (Dermal Contact) Soil Type 2 (Silty)		Ratio of May 2006/Feb. 2005	Why Changed
			RBTL Feb. 2005 (mg/L)	RBTL May 2006 (mg/L)		
Carbon tetrachloride	56-23-5	NA	1.06E-01	4.69E-02	0.4	- Adoption of RAGS Part E
1,1-Dichloroethane	75-34-3	NA	5.77E+00	3.53E+00	0.6	- Adoption of RAGS Part E
cis-1,2-Dichloroethylene	156-59-2	NIC	4.82E+00	4.22E+00	0.9	- Adoption of RAGS Part E
1,2-Dichloropropane	78-87-5	NA	5.21E-01	4.21E-01	0.8	- Adoption of RAGS Part E
1,3-Dichloropropene	542-75-6	NA	5.13E-01	2.99E-01	0.6	- Adoption of RAGS Part E
1,4-Dioxane	123-91-1	NA	6.07E+01	3.93E+01	0.6	- Adoption of RAGS Part E
Methyl ethyl ketone	78-93-3	NA	2.31E+03	2.27E+03	0.98	- Adoption of RAGS Part E
Methylene chloride	75-09-2	NA	8.40E+00	5.54E+00	0.7	- Adoption of RAGS Part E
Tetrachloroethylene	127-18-4	NA	1.28E-01	5.06E-03	0.04	- Adoption of RAGS Part E and change in deraml slope factor
1,1,1-Trichloroethane	71-55-6	NA	7.95E+01	5.64E+01	0.7	- Adoption of RAGS Part E
Trichloroethylene	79-01-6	NA	1.41E+00	7.22E-01	0.5	- Adoption of RAGS Part E
Vinyl chloride	75-01-4	NA	2.81E-02	2.06E-02	0.7	- Adoption of RAGS Part E
Bis(2-ethylhexyl)phthalate	117-81-7	NA	6.30E-01	7.52E-02	0.1	- Adoption of RAGS Part E
1,2-Dibromo-3-chloropropane	96-12-8	NA	3.56E-02	9.82E-03	0.3	- Adoption of RAGS Part E
Ethylene glycol	107-21-1	NA	6.43E+04	6.62E+04	1.03	+ Adoption of RAGS Part E
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	2.38E+00	5.56E-02	0.02	- Adoption of RAGS Part E and change in dermal reference dose
3-Nitroaniline**	99-09-2	NIC	3.53E-01	2.45E-01	0.7	- Adoption of RAGS Part E
Pentachlorophenol	87-86-5	NA	4.71E-03	1.12E-03	0.2	- Adoption of RAGS Part E
Polychlorinated biphenyls (PCBs)	1336-36-3	NA	3.24E-04	6.34E-05	0.2	- Adoption of RAGS Part E
alpha-Hexachlorocyclohexane	319-84-6	NA	1.45E-03	2.90E-04	0.2	- Adoption of RAGS Part E
Atrazine	1912-24-9	NA	1.34E-01	4.23E-02	0.3	- Adoption of RAGS Part E
Chlordane (technical)	12789-03-6	NA	3.45E-03	5.37E-04	0.2	- Adoption of RAGS Part E
DDT	50-29-3	NA	2.40E-03	4.14E-04	0.2	- Adoption of RAGS Part E
Diazinon	333-41-5	NA	2.99E-01	7.71E-02	0.3	- Adoption of RAGS Part E
Silvex (2,4,5-TP)	93-72-1	NA	2.25E+00	7.02E-01	0.3	- Adoption of RAGS Part E
Arsenic*	7440-38-2	NA	NA	1.58E-01	NA	Adoption of RAGS Part E
Cadmium*	7440-43-9	NA	NA	6.25E-01	NA	Adoption of RAGS Part E
Mercury	7439-97-6	NA	NA	NA	NA	
Cyanide	57-12-5	NA	7.39E+01	1.12E+02	1.5	+ Adoption of RAGS Part E and change in skin surface area

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NA: Not available

NIC: Chemical not in CALM

RAGS: Risk assessment guidance for superfund

RBTL: Risk-based target level

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

**: February 2005 value was in error. Therefore, revised February 2005 value is shown.

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

Table 19
Changes in Risk-Based Target Levels for Residential Land Use, Soil Type 2 (Silty)
Departmental MRBCA Technical Guidance
Groundwater (Domestic Water Use)

Chemical	CAS #	Equivalent CALM (mg/L)	Groundwater (Domestic Water Use) Soil Type 2 (Silty)		Ratio of May 2006/Feb. 2005	Why Changed
			RBTL Feb. 2005 (mg/L)	RBTL May 2006 (mg/L)		
Carbon tetrachloride	56-23-5	NA	5.00E-03	5.00E-03	1.0	=
1,1-Dichloroethane	75-34-3	NA	2.52E-02	2.49E-02	0.99	-
cis-1,2-Dichloroethylene	156-59-2	NIC	7.00E-02	7.00E-02	1.0	=
1,2-Dichloropropane	78-87-5	NA	5.00E-03	5.00E-03	1.0	=
1,3-Dichloropropene	542-75-6	NA	4.41E-03	4.31E-03	0.98	-
1,4-Dioxane**	123-91-1	NA	6.11E-02	6.10E-02	0.998	-
Methyl ethyl ketone	78-93-3	NA	3.65E+00	3.64E+00	0.998	-
Methylene chloride	75-09-2	NA	5.00E-03	5.00E-03	1.0	=
Tetrachloroethylene	127-18-4	NA	5.00E-03	5.00E-03	1.0	=
1,1,1-Trichloroethane	71-55-6	NA	2.00E-01	2.00E-01	1.0	=
Trichloroethylene	79-01-6	NA	5.00E-03	5.00E-03	1.0	=
Vinyl chloride	75-01-4	NA	2.00E-03	2.00E-03	1.0	=
Bis(2-ethylhexyl)phthalate	117-81-7	NA	6.00E-03	6.00E-03	1.0	=
1,2-Dibromo-3-chloropropane	96-12-8	NA	2.00E-04	2.00E-04	1.0	=
Ethylene glycol**	107-21-1	NA	3.13E+01	3.13E+01	0.999	-
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	3.13E-02	1.51E-03	0.05	-
3-Nitroaniline**	99-09-2	NIC	4.69E-03	4.57E-03	0.97	-
Pentachlorophenol	87-86-5	NA	1.00E-03	1.00E-03	1.0	=
Polychlorinated biphenyls (PCBs)	1336-36-3	NA	5.00E-04	5.00E-04	1.0	=
alpha-Hexachlorocyclohexane	319-84-6	NA	1.07E-04	6.88E-05	0.6	-
Atrazine	1912-24-9	NA	3.00E-03	3.00E-03	1.0	=
Chlordane (technical)	12789-03-6	NA	1.92E-03	3.02E-04	0.2	-
DDT	50-29-3	NA	1.98E-03	2.42E-04	0.1	-
Diazinon	333-41-5	NA	1.41E-02	1.13E-02	0.8	-
Silvex (2,4,5-TP)	93-72-1	NA	5.00E-02	5.00E-02	1.0	=
Arsenic*	7440-38-2	NA	1.00E-02	1.00E-02	1.0	=
Cadmium*	7440-43-9	NA	5.00E-03	5.00E-03	1.0	=
Mercury	7439-97-6	NA	NA	NA	NA	NA
Cyanide	57-12-5	NA	3.13E-01	3.12E-01	0.998	-

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NA: Not available

NIC: Chemical not in CALM

RAGS: Risk assessment guidance for superfund

RBTL: Risk-based target level

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

**: February 2005 value was in error. Therefore, revised February 2005 value is shown.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

=: May 2006 value is same as February 2005 value.

Table 20
Changes in Risk-Based Target Levels for Non-residential Land Use, Soil Type 2 (Silty)
Departmental MRBCA Technical Guidance
Surficial Soil (Ingestion, Inhalation, and Dermal Contact)

Chemical	CAS #	Equivalent CALM (STARC Scenario B) (mg/kg)	Surficial Soil (Ingestion, Inhalation, and Dermal Contact) Soil Type 2 (Silty)		Ratio of May 2006/Feb. 2005	Why Changed	
			RBTL Feb. 2005 (mg/kg)	RBTL May 2006 (mg/kg)			
Carbon tetrachloride	56-23-5	3.00E+00	1.94E+01	2.08E+02	10.7	+	Changes in skin surface area (SA), soil adherence factor (AF), and dermal absorption factor (RAFd)
1,1-Dichloroethane	75-34-3	NIC	2.59E+02	4.42E+03	17.1	+	Changes in SA, AF, RAFd, and inhalation reference dose
cis-1,2-Dichloroethylene	156-59-2	1.20E+03	5.21E+02	8.97E+03	17.2	+	Changes in SA, AF, and RAFd
1,2-Dichloropropane	78-87-5	1.40E+01	4.67E+01	6.98E+02	14.9	+	Changes in SA, AF, and RAFd
1,3-Dichloropropene	542-75-6	1.00E+00	3.73E+01	2.81E+02	7.5	+	Changes in SA, AF, and RAFd
1,4-Dioxane	123-91-1	2.10E+02	3.05E+02	1.30E+03	4.3	+	Changes in SA and AF
Methyl ethyl ketone	78-93-3	1.00E+04	8.80E+04	5.79E+05	6.6	+	Changes in SA, AF, and RAFd
Methylene chloride	75-09-2	7.10E+01	4.35E+02	3.70E+03	8.5	+	Changes in SA, AF, and RAFd
Tetrachloroethylene	127-18-4	5.50E+01	6.56E+01	5.27E+01	0.8	-	Changes in SA, AF, RAFd, and oral/inhalation slope factors
1,1,1-Trichloroethane	71-55-6	1.20E+03	2.40E+04	2.69E+05	11.2	+	Changes in SA, AF, and RAFd
Trichloroethylene	79-01-6	5.60E+01	1.73E+02	2.05E+03	11.8	+	Changes in SA, AF, and RAFd
Vinyl chloride	75-01-4	4.00E-01	3.40E+00	2.04E+01	6.0	+	Changes in SA, AF, and RAFd
Bis(2-ethylhexyl)phthalate	117-81-7	5.70E+02	3.58E+02	1.23E+03	3.4	+	Changes in SA and AF
1,2-Dibromo-3-chloropropane	96-12-8	2.00E+00	3.47E+00	1.14E+01	3.3	+	Changes in SA and AF
Ethylene glycol	107-21-1	1.24E+05	1.71E+05	4.99E+05	2.9	+	Changes in SA and AF
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	1.65E+02	5.61E+01	0.3	-	Changes in SA, AF, and oral reference dose
3-Nitroaniline	99-09-2	NIC	5.20E+01	1.70E+02	3.3	+	Changes in SA and AF
Pentachlorophenol	87-86-5	9.00E+00	1.86E+01	9.00E+01	4.8	+	Changes in SA and AF
Polychlorinated biphenyls (PCBs)	1336-36-3	9.00E-01	1.88E+00	7.39E+00	3.9	+	Changes in SA and AF
alpha-Hexachlorocyclohexane	319-84-6	4.00E-01	7.84E-01	2.61E+00	3.3	+	Changes in SA and AF
Atrazine	1912-24-9	1.00E+01	2.18E+01	7.49E+01	3.4	+	Changes in SA and AF
Chlordane (technical)	12789-03-6	1.00E+01	1.43E+01	4.88E+01	3.4	+	Changes in SA and AF
DDT	50-29-3	1.20E+01	1.47E+01	5.07E+01	3.4	+	Changes in SA and AF
Diazinon	333-41-5	5.90E+01	1.59E+02	5.54E+02	3.5	+	Changes in SA and AF
Silvex (2,4,5-TP)	93-72-1	7.90E+02	1.40E+03	4.93E+03	3.5	+	Changes in SA and AF
Arsenic*	7440-38-2	1.10E+01	1.91E+01	1.59E+01	0.8	-	Changes in SA, AF, and oral absorption factor
Cadmium*	7440-43-9	1.50E+02	3.47E+02	7.48E+01	0.2	-	Changes in SA, AF, RAFd, and oral slope factor
Mercury	7439-97-6	8.00E-01	6.30E+00	6.30E+02	100	+	Changes in SA, AF, and soil-water partition coefficient
Cyanide	57-12-5	7.67E+03	3.58E+03	1.23E+04	3.4	+	Changes in SA and AF

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NIC: Chemical not in CALM

RBTL: Risk-based target level

STARC: Soil target concentration

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

Table 21
Changes in Risk-Based Target Levels for Non-residential Land Use, Soil Type 2 (Silty)
Departmental MRBCA Technical Guidance
Subsurface Soil (Indoor Inhalation)

Chemical	CAS #	Equivalent CALM (mg/kg)	Subsurface Soil (Indoor Inhalation of Vapors) Soil Type 2 (Silty)		Ratio of May 2006/Feb. 2005	Why Changed
			RBTL Feb. 2005 (mg/kg)	RBTL Jan. 2006 (mg/kg)		
Carbon tetrachloride	56-23-5	NA	8.15E-01	8.15E-01	1.0	=
1,1-Dichloroethane	75-34-3	NA	1.10E+01	1.10E+01	1.0	=
cis-1,2-Dichloroethylene	156-59-2	NIC	3.11E+01	3.11E+01	1.0	=
1,2-Dichloropropane	78-87-5	NA	3.80E+00	3.69E+00	0.97	- Change in inhalation slope factor
1,3-Dichloropropene	542-75-6	NA	2.45E+00	2.45E+00	1.0	=
1,4-Dioxane	123-91-1	NA	5.08E+02	5.08E+02	1.0	=
Methyl ethyl ketone	78-93-3	NA	1.03E+05	1.03E+05	1.0	=
Methylene chloride	75-09-2	NA	4.03E+01	4.03E+01	1.0	=
Tetrachloroethylene	127-18-4	NA	6.54E+00	3.11E+00	0.5	- Change in inhalation slope factor
1,1,1-Trichloroethane	71-55-6	NA	1.11E+03	1.11E+03	1.0	=
Trichloroethylene	79-01-6	NA	1.53E+01	1.53E+01	1.0	=
Vinyl chloride	75-01-4	NA	3.53E-01	3.53E-01	1.0	=
Bis(2-ethylhexyl)phthalate	117-81-7	NA	2.09E+11	2.09E+10	0.1	- Change in inhalation slope factor
1,2-Dibromo-3-chloropropane	96-12-8	NA	3.94E+02	3.94E+02	1.0	=
Ethylene glycol	107-21-1	NA	5.85E+05	5.85E+05	1.0	=
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	6.70E+02	6.70E+02	1.0	=
3-Nitroaniline	99-09-2	NIC	5.80E+03	6.08E+03	1.05	+ Change in inhalation reference dose
Pentachlorophenol	87-86-5	NA	4.50E+05	4.50E+05	1.0	=
Polychlorinated biphenyls (PCBs)	1336-36-3	NA	1.32E+04	1.32E+04	1.0	=
alpha-Hexachlorocyclohexane	319-84-6	NA	4.63E+02	4.63E+02	1.0	=
Atrazine	1912-24-9	NA	3.46E+04	3.46E+04	1.0	=
Chlordane (technical)	12789-03-6	NA	2.53E+05	2.53E+05	1.0	=
DDT	50-29-3	NA	2.50E+07	2.50E+07	1.0	=
Diazinon	333-41-5	NA	1.27E+05	1.27E+05	1.0	=
Silvex (2,4,5-TP)	93-72-1	NA	3.09E+05	3.09E+05	1.0	=
Arsenic*	7440-38-2	NA	NA	NA	NA	NA
Cadmium*	7440-43-9	NA	NA	NA	NA	NA
Mercury	7439-97-6	NA	1.53E-01	3.35E+01	220	+ Change in soil-water partition coefficient
Cyanide	57-12-5	NA	NA	NA	NA	NA

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NA: Not available

NIC: Chemical not in CALM

RBTL: Risk-based target level

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

=: May 2006 value is same as February 2005 value.

Table 22
Changes in Risk-Based Target Levels for Non-residential Land Use, Soil Type 2 (Silty)
Departmental MRBCA Technical Guidance
Groundwater (Indoor Inhalation)

Chemical	CAS #	Equivalent CALM (mg/L)	Groundwater (Indoor Inhalation of Vapors) Soil Type 2 (Silty)		Ratio of May 2006/Feb. 2005	Why Changed
			RBTL Feb. 2005 (mg/L)	RBTL May 2006 (mg/kg)		
Carbon tetrachloride	56-23-5	NA	6.70E-01	6.70E-01	1.0	=
1,1-Dichloroethane	75-34-3	NA	3.42E+01	3.42E+01	1.0	=
cis-1,2-Dichloroethylene	156-59-2	NIC	9.36E+01	9.36E+01	1.0	=
1,2-Dichloropropane	78-87-5	NA	1.03E+01	9.97E+00	0.97	- Change in inhalation slope factor
1,3-Dichloropropene	542-75-6	NA	5.29E+00	5.29E+00	1.0	=
1,4-Dioxane	123-91-1	NA	2.39E+03	2.39E+03	1.0	=
Methyl ethyl ketone	78-93-3	NA	7.40E+05	7.40E+05	1.0	=
Methylene chloride	75-09-2	NA	2.14E+02	2.14E+02	1.0	=
Tetrachloroethylene	127-18-4	NA	6.25E+00	2.98E+00	0.5	- Change in inhalation slope factor
1,1,1-Trichloroethane	71-55-6	NA	1.38E+03	1.38E+03	1.0	=
Trichloroethylene	79-01-6	NA	1.43E+01	1.43E+01	1.0	=
Vinyl chloride	75-01-4	NA	9.59E-01	9.59E-01	1.0	=
Bis(2-ethylhexyl)phthalate	117-81-7	NA	2.34E+06	2.34E+05	0.1	- Change in inhalation slope factor
1,2-Dibromo-3-chloropropane	96-12-8	NA	1.41E+03	1.41E+03	1.0	=
Ethylene glycol	107-21-1	NA	4.32E+06	4.32E+06	1.0	=
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	5.98E+03	5.98E+03	1.0	=
3-Nitroaniline	99-09-2	NIC	1.68E+04	1.76E+04	1.05	+ Change in inhalation reference dose
Pentachlorophenol	87-86-5	NA	1.24E+05	1.24E+05	1.0	=
Polychlorinated biphenyls (PCBs)	1336-36-3	NA	7.29E+00	7.29E+00	1.0	=
alpha-Hexachlorocyclohexane	319-84-6	NA	6.26E+01	6.26E+01	1.0	=
Atrazine	1912-24-9	NA	1.15E+04	1.15E+04	1.0	=
Chlordane (technical)	12789-03-6	NA	3.56E+02	3.56E+02	1.0	=
DDT	50-29-3	NA	1.60E+03	1.60E+03	1.0	=
Diazinon	333-41-5	NA	8.66E+04	8.66E+04	1.0	=
Silvex (2,4,5-TP)	93-72-1	NA	6.98E+05	6.98E+05	1.0	=
Arsenic*	7440-38-2	NA	NA	NA	NA	NA
Cadmium*	7440-43-9	NA	NA	NA	NA	NA
Mercury	7439-97-6	NA	7.05E-01	7.05E-01	1.0	=
Cyanide	57-12-5	NA	NA	NA	NA	NA

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NA: Not available

NIC: Chemical not in CALM

RBTL: Risk-based target level

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

=: May 2006 value is same as February 2005 value.

Table 23
Changes in Risk-Based Target Levels for Non-residential Land Use, Soil Type 2 (Silty)
Departmental MRBCA Technical Guidance
Groundwater (Dermal Contact)

Chemical	CAS #	Equivalent CALM (mg/L)	Groundwater (Dermal Contact) Soil Type 2 (Silty)		Ratio of May 2006/Feb. 2005	Why Changed
			RBTL Feb. 2005 (mg/L)	RBTL May 2006 (mg/L)		
Carbon tetrachloride	56-23-5	NA	2.92E-01	1.71E-01	0.6	- Adoption of RAGS Part E
1,1-Dichloroethane	75-34-3	NA	1.59E+01	1.29E+01	0.8	- Adoption of RAGS Part E
cis-1,2-Dichloroethylene	156-59-2	NIC	2.83E+01	2.34E+01	0.8	- Adoption of RAGS Part E
1,2-Dichloropropane	78-87-5	NA	2.16E+00	1.65E+00	0.8	- Adoption of RAGS Part E
1,3-Dichloropropene	542-75-6	NA	1.41E+00	1.09E+00	0.8	- Adoption of RAGS Part E
1,4-Dioxane	123-91-1	NA	1.67E+02	1.44E+02	0.9	- Adoption of RAGS Part E
Methyl ethyl ketone	78-93-3	NA	1.36E+04	1.26E+04	0.9	- Adoption of RAGS Part E
Methylene chloride	75-09-2	NA	2.31E+01	2.02E+01	0.9	- Adoption of RAGS Part E
Tetrachloroethylene	127-18-4	NA	3.54E-01	1.85E-02	0.1	- Adoption of RAGS Part E and change in dermal slope factor
1,1,1-Trichloroethane	71-55-6	NA	4.67E+02	3.13E+02	0.7	- Adoption of RAGS Part E
Trichloroethylene	79-01-6	NA	3.89E+00	2.64E+00	0.7	- Adoption of RAGS Part E
Vinyl chloride	75-01-4	NA	7.74E-02	7.53E-02	1.0	- Adoption of RAGS Part E
Bis(2-ethylhexyl)phthalate	117-81-7	NA	1.73E+00	2.75E-01	0.2	- Adoption of RAGS Part E
1,2-Dibromo-3-chloropropane	96-12-8	NA	9.81E-02	3.59E-02	0.4	- Adoption of RAGS Part E
Ethylene glycol	107-21-1	NA	3.77E+05	3.67E+05	1.0	- Adoption of RAGS Part E
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	1.40E+01	3.08E-01	0.02	- Adoption of RAGS Part E and change in dermal reference dose
3-Nitroaniline**	99-09-2	NIC	2.07E+00	1.36E+00	0.7	- Adoption of RAGS Part E
Pentachlorophenol	87-86-5	NA	1.30E-02	4.08E-03	0.3	- Adoption of RAGS Part E
Polychlorinated biphenyls (PCBs)	1336-36-3	NA	8.91E-04	2.31E-04	0.3	- Adoption of RAGS Part E
alpha-Hexachlorocyclohexane	319-84-6	NA	3.99E-03	1.06E-03	0.3	- Adoption of RAGS Part E
Atrazine	1912-24-9	NA	3.70E-01	1.55E-01	0.4	- Adoption of RAGS Part E
Chlordane (technical)	12789-03-6	NA	9.50E-03	1.96E-03	0.2	- Adoption of RAGS Part E
DDT	50-29-3	NA	6.61E-03	1.51E-03	0.2	- Adoption of RAGS Part E
Diazinon	333-41-5	NA	1.76E+00	4.27E-01	0.2	- Adoption of RAGS Part E
Silvex (2,4,5-TP)	93-72-1	NA	1.32E+01	3.89E+00	0.3	- Adoption of RAGS Part E
Arsenic*	7440-38-2	NA	NA	5.78E-01	NA	Adoption of RAGS Part E
Cadmium*	7440-43-9	NA	NA	2.28E+00	NA	Adoption of RAGS Part E
Mercury	7439-97-6	NA	NA	NA	NA	
Cyanide	57-12-5	NA	4.34E+02	6.19E+02	1.4	+ Adoption of RAGS Part E and change in skin surface area

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NA: Not available

NIC: Chemical not in CALM

RAGS: Risk assessment guidance for superfund

RBTL: Risk-based target level

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

**: February 2005 value was in error. Therefore, revised February 2005 value is shown.

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

Table 24
Changes in Risk-Based Target Levels for Construction Worker, Soil Type 2 (Silty)
Departmental MRBCA Technical Guidance
Soil (Ingestion, Inhalation, and Dermal Contact)

Chemical	CAS #	Equivalent CALM (mg/kg)	Soil (Ingestion, Inhalation, and Dermal Contact) Soil Type 2 (Silty)		Ratio of May 2006/Feb. 2005	Why Changed	
			RBTL Feb. 2005 (mg/kg)	RBTL May 2006 (mg/kg)			
Carbon tetrachloride	56-23-5	NA	1.09E+02	1.18E+03	10.8	+	Changes in skin SA, soil AF, IR, and dermal absorption factor (RAFd)
1,1-Dichloroethane	75-34-3	NA	2.00E+03	3.48E+03	1.7	+	Changes in SA, AF, RAFd, and inhalation reference dose (RfDi)
cis-1,2-Dichloroethylene	156-59-2	NIC	1.90E+02	2.31E+03	12.2	+	Changes in SA, AF, and RAFd
1,2-Dichloropropane	78-87-5	NA	2.65E+01	2.64E+02	9.9	+	Changes in skin SA, soil AF, IR, RAFd, and RfDi
1,3-Dichloropropene	542-75-6	NA	7.06E+01	1.42E+03	20.1	+	Changes in skin SA, soil AF, IR, RAFd, and RfDi
1,4-Dioxane	123-91-1	NA	5.35E+03	6.10E+03	1.1	+	Changes in SA and AF
Methyl ethyl ketone	78-93-3	NA	9.32E+04	2.97E+05	3.2	+	Changes in SA, AF, and RAFd
Methylene chloride	75-09-2	NA	1.85E+03	2.46E+04	13.3	+	Changes in SA, AF, and RAFd
Tetrachloroethylene	127-18-4	NA	1.02E+03	2.56E+03	2.5	+	Changes in SA, AF, IR, RAFd, and oral/inhalation/dermal slope factors
1,1,1-Trichloroethane	71-55-6	NA	8.76E+03	1.32E+05	15.1	+	Changes in SA, AF, and RAFd
Trichloroethylene	79-01-6	NA	2.02E+03	2.16E+04	10.7	+	Changes in SA, AF, and RAFd
Vinyl chloride	75-01-4	NA	9.69E+01	1.14E+03	11.7	+	Changes in SA, AF, and RAFd
Bis(2-ethylhexyl)phthalate	117-81-7	NA	9.93E+03	2.85E+04	2.9	+	Changes in SA and AF
1,2-Dibromo-3-chloropropane	96-12-8	NA	2.24E+01	3.30E+01	1.5	+	Change in SA, AF, IR, and RfDi
Ethylene glycol	107-21-1	NA	8.38E+04	5.54E+04	0.7	-	Changes in SA and AF
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	7.83E+01	3.83E+01	0.5	-	Changes in SA, AF, and oral/dermal reference doses
3-Nitroaniline	99-09-2	NIC	1.12E+02	1.75E+02	1.6	+	Changes in SA, AF, and RfDi
Pentachlorophenol	87-86-5	NA	1.29E+03	4.77E+03	3.7	+	Changes in SA and AF
Polychlorinated biphenyls (PCBs)	1336-36-3	NA	1.29E+02	3.88E+02	3.0	+	Changes in SA and AF
alpha-Hexachlorocyclohexane	319-84-6	NA	4.85E+01	9.67E+01	2.0	+	Changes in SA and AF
Atrazine	1912-24-9	NA	1.51E+03	4.34E+03	2.9	+	Changes in SA and AF
Chlordane (technical)	12789-03-6	NA	2.34E+02	5.53E+02	2.4	+	Changes in SA and AF
DDT	50-29-3	NA	2.48E+02	7.13E+02	2.9	+	Changes in SA and AF
Diazinon	333-41-5	NA	4.00E+02	1.28E+03	3.2	+	Changes in SA and AF
Silvex (2,4,5-TP)	93-72-1	NA	3.24E+03	1.14E+04	3.5	+	Changes in SA and AF
Arsenic*	7440-38-2	NA	8.54E+02	6.54E+02	0.8	-	Changes in SA, AF, and oral absorption factor
Cadmium*	7440-43-9	NA	9.65E+02	2.81E+03	2.9	+	Changes in SA, AF, RAFd, and oral slope factor
Mercury	7439-97-6	NA	1.28E+00	2.16E+01	16.9	+	Changes in SA, AF, and soil-water partition coefficient
Cyanide	57-12-5	NA	9.93E+03	2.85E+04	2.9	+	Changes in SA and AF

Notes:

AF: Adherence factor

CALM: Cleanup levels for Missouri

IR: Inhalation rate

MRBCA: Missouri risk-based corrective action

NA: Not available

NIC: Chemical not in CALM

RBTL: Risk-based target level

SA: Skin surface area

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

Table 25
Changes in Risk-Based Target Levels for Construction Worker, Soil Type 2 (Silty)
Departmental MRBCA Technical Guidance
Groundwater (Outdoor Inhalation)

Chemical	CAS #	Equivalent CALM (mg/L)	Groundwater (Outdoor Inhalation of Vapors) Soil Type 2 (Silty)		Ratio of May 2006/Feb. 2005	Why Changed
			RBTL Feb. 2005 (mg/L)	RBTL May 2006 (mg/L)		
Carbon tetrachloride	56-23-5	NA	6.79E+03	4.19E+03	0.6	- Change in inhalation rate (IR)
1,1-Dichloroethane	75-34-3	NA	2.69E+05	1.86E+04	0.1	- Changes in IR and inhalation reference dose (RfDi)
cis-1,2-Dichloroethylene	156-59-2	NIC	2.57E+04	1.59E+04	0.6	- Change in IR
1,2-Dichloropropane	78-87-5	NA	3.93E+03	2.43E+03	0.6	- Change in IR
1,3-Dichloropropene	542-75-6	NA	6.34E+03	3.91E+03	0.6	- Changes in IR and RfDi
1,4-Dioxane	123-91-1	NA	4.45E+06	2.74E+06	0.6	- Change in IR
Methyl ethyl ketone	78-93-3	NA	5.92E+07	3.65E+07	0.6	- Change in IR
Methylene chloride	75-09-2	NA	3.42E+05	2.11E+05	0.6	- Change in IR
Tetrachloroethylene	127-18-4	NA	6.96E+04	2.05E+04	0.3	- Changes in IR and inhalation slope factor
1,1,1-Trichloroethane	71-55-6	NA	6.12E+05	3.77E+05	0.6	- Change in IR
Trichloroethylene	79-01-6	NA	1.44E+05	8.89E+04	0.6	- Change in IR
Vinyl chloride	75-01-4	NA	1.23E+04	7.60E+03	0.6	- Change in IR
Bis(2-ethylhexyl)phthalate	117-81-7	NA	1.71E+08	1.05E+08	0.6	- Change in IR
1,2-Dibromo-3-chloropropane	96-12-8	NA	3.53E+05	1.82E+05	0.5	- Changes in IR and RfDi
Ethylene glycol	107-21-1	NA	3.15E+08	1.94E+08	0.6	- Change in IR
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	4.36E+05	2.69E+05	0.6	- Change in IR
3-Nitroaniline	99-09-2	NIC	1.22E+06	7.93E+05	0.6	- Changes in IR and RfDi
Pentachlorophenol	87-86-5	NA	1.75E+08	1.08E+08	0.6	- Change in IR
Polychlorinated biphenyls (PCBs)	1336-36-3	NA	2.01E+04	1.24E+04	0.6	- Change in IR
alpha-Hexachlorocyclohexane	319-84-6	NA	5.15E+04	7.07E+04	1.4	+ Changes in IR and RfDi
Atrazine	1912-24-9	NA	2.10E+07	1.29E+07	0.6	- Change in IR
Chlordane (technical)	12789-03-6	NA	6.67E+04	4.11E+04	0.6	- Change in IR
DDT	50-29-3	NA	7.11E+05	4.39E+05	0.6	- Change in IR
Diazinon	333-41-5	NA	6.31E+06	3.89E+06	0.6	- Change in IR
Silvex (2,4,5-TP)	93-72-1	NA	5.09E+07	3.14E+07	0.6	- Change in IR
Arsenic*	7440-38-2	NA	NA	NA	NA	NA
Cadmium*	7440-43-9	NA	NA	NA	NA	NA
Mercury	7439-97-6	NA	2.51E+02	1.55E+02	0.6	- Change in IR
Cyanide	57-12-5	NA	NA	NA	NA	NA

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NA: Not available

NIC: Chemical not in CALM

RBTL: Risk-based target level

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

Table 26
Changes in Risk-Based Target Levels for Construction Worker, Soil Type 2 (Silty)
Departmental MRBCA Technical Guidance
Groundwater (Dermal Contact)

Chemical	CAS #	Equivalent CALM (mg/L)	Groundwater (Dermal Contact) Soil Type 2 (Silty)		Ratio of May 2006/Feb. 2005	Why Changed
			RBTL Feb. 2005 (mg/L)	RBTL May 2006 (mg/L)		
Carbon tetrachloride	56-23-5	NA	2.63E+00	1.55E+00	0.6	- Adoption of RAGS Part E
1,1-Dichloroethane	75-34-3	NA	8.99E+02	7.30E+02	0.8	- Adoption of RAGS Part E
cis-1,2-Dichloroethylene	156-59-2	NIC	7.85E+01	6.50E+01	0.8	- Adoption of RAGS Part E
1,2-Dichloropropane	78-87-5	NA	8.49E+00	6.48E+00	0.8	- Adoption of RAGS Part E
1,3-Dichloropropene	542-75-6	NA	9.80E+01	7.58E+01	0.8	- Adoption of RAGS Part E
1,4-Dioxane	123-91-1	NA	1.16E+04	9.97E+03	0.9	- Adoption of RAGS Part E
Methyl ethyl ketone	78-93-3	NA	3.76E+04	3.50E+04	0.9	- Adoption of RAGS Part E
Methylene chloride	75-09-2	NA	1.03E+03	9.03E+02	0.9	- Adoption of RAGS Part E
Tetrachloroethylene	127-18-4	NA	1.82E+01	1.28E+00	0.1	- Adoption of RAGS Part E and change in dermal slope factor
1,1,1-Trichloroethane	71-55-6	NA	1.30E+03	8.68E+02	0.7	- Adoption of RAGS Part E
Trichloroethylene	79-01-6	NA	2.70E+02	1.83E+02	0.7	- Adoption of RAGS Part E
Vinyl chloride	75-01-4	NA	5.38E+00	5.23E+00	1.0	- Adoption of RAGS Part E
Bis(2-ethylhexyl)phthalate	117-81-7	NA	4.82E+01	7.63E+00	0.2	- Adoption of RAGS Part E
1,2-Dibromo-3-chloropropane	96-12-8	NA	7.77E-01	2.84E-01	0.4	- Adoption of RAGS Part E
Ethylene glycol	107-21-1	NA	1.05E+06	1.02E+06	1.0	- Adoption of RAGS Part E
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	3.89E+01	8.56E-01	0.02	- Adoption of RAGS Part E and change in deramrl reference dose
3-Nitroaniline**	99-09-2	NIC	5.75E+00	3.77E+00	0.7	- Adoption of RAGS Part E
Pentachlorophenol	87-86-5	NA	9.01E-01	2.84E-01	0.3	- Adoption of RAGS Part E
Polychlorinated biphenyls (PCBs)	1336-36-3	NA	6.19E-02	1.61E-02	0.3	- Adoption of RAGS Part E
alpha-Hexachlorocyclohexane	319-84-6	NA	2.77E-01	7.36E-02	0.3	- Adoption of RAGS Part E
Atrazine	1912-24-9	NA	2.57E+01	1.07E+01	0.4	- Adoption of RAGS Part E
Chlordane (technical)	12789-03-6	NA	1.65E-01	3.40E-02	0.2	- Adoption of RAGS Part E
DDT	50-29-3	NA	1.12E-01	2.55E-02	0.2	- Adoption of RAGS Part E
Diazinon	333-41-5	NA	4.88E+00	1.19E+00	0.2	- Adoption of RAGS Part E
Silvex (2,4,5-TP)	93-72-1	NA	3.66E+01	1.08E+01	0.3	- Adoption of RAGS Part E
Arsenic*	7440-38-2	NA	NA	2.58E+01	NA	Adoption of RAGS Part E
Cadmium*	7440-43-9	NA	NA	8.60E+01	NA	Adoption of RAGS Part E
Mercury	7439-97-6	NA	NA	NA	NA	
Cyanide	57-12-5	NA	1.20E+03	1.72E+03	1.4	+ Adoption of RAGS Part E and change in skin surface area

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NA: Not available

NIC: Chemical not in CALM

RAGS: Risk assessment guidance for superfund

RBTL: Risk-based target level

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

**: February 2005 value was in error. Therefore, revised February 2005 value is shown.

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

Table 27
Changes in Risk-Based Target Levels for Residential Land Use, Soil Type 3 (Clayey)
Departmental MRBCA Technical Guidance
Surficial Soil (Ingestion, Inhalation, and Dermal Contact)

Chemical	CAS #	Equivalent CALM (STARC Scenario A) (mg/kg)	Surficial Soil (Ingestion, Inhalation, and Dermal Contact) Soil Type 3 (Clayey)		Ratio of May 2006/Feb. 2005	Why Changed	
			RBTL Feb. 2005 (mg/kg)	RBTL May 2006 (mg/kg)			
Carbon tetrachloride	56-23-5	2.00E+00	8.03E+00	4.81E+01	6.0	+	Changes in skin surface area (SA), soil adherence factor (AF), and dermal absorption factor (RAFd)
1,1-Dichloroethane	75-34-3	NIC	1.20E+02	1.06E+03	8.8	+	Changes in SA, AF, RAFd, and inhalation reference dose
cis-1,2-Dichloroethylene	156-59-2	1.20E+03	9.14E+01	6.83E+02	7.5	+	Changes in SA, AF, and RAFd
1,2-Dichloropropane	78-87-5	1.00E+01	1.17E+01	7.55E+01	6.5	+	Changes in SA, AF, and RAFd
1,3-Dichloropropene	542-75-6	9.00E-01	1.37E+01	6.34E+01	4.6	+	Changes in SA, AF, and RAFd
1,4-Dioxane	123-91-1	1.50E+02	1.20E+02	4.00E+02	3.3	+	Changes in SA and AF
Methyl ethyl ketone	78-93-3	7.40E+03	1.31E+04	4.42E+04	3.4	+	Changes in SA, AF, and RAFd
Methylene chloride	75-09-2	5.10E+01	1.69E+02	8.42E+02	5.0	+	Changes in SA, AF, and RAFd
Tetrachloroethylene	127-18-4	4.00E+01	2.48E+01	1.18E+01	0.5	-	Changes in SA, AF, RAFd, and oral/inhalation slope factors
1,1,1-Trichloroethane	71-55-6	1.20E+03	3.41E+03	2.06E+04	6.0	+	Changes in SA, AF, and RAFd
Trichloroethylene	79-01-6	4.00E+01	7.93E+01	4.77E+02	6.0	+	Changes in SA, AF, and RAFd
Vinyl chloride	75-01-4	3.00E-01	1.14E+00	4.56E+00	4.0	+	Changes in SA, AF, and RAFd
Bis(2-ethylhexyl)phthalate	117-81-7	4.10E+02	1.17E+02	3.47E+02	3.0	+	Changes in SA and AF
1,2-Dibromo-3-chloropropane	96-12-8	1.00E+00	1.14E+00	3.18E+00	2.8	+	Changes in SA and AF
Ethylene glycol	107-21-1	1.24E+05	2.20E+04	4.10E+04	1.9	+	Changes in SA and AF
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	2.09E+01	5.40E+00	0.3	-	Changes in SA, AF, and oral reference dose
3-Nitroaniline	99-09-2	NIC	7.22E+00	1.67E+01	2.3	+	Changes in SA and AF
Pentachlorophenol	87-86-5	6.00E+00	6.45E+00	2.97E+01	4.6	+	Changes in SA and AF
Polychlorinated biphenyls (PCBs)	1336-36-3	6.00E-01	6.31E-01	2.21E+00	3.5	+	Changes in SA and AF
alpha-Hexachlorocyclohexane	319-84-6	3.00E-01	2.58E-01	7.52E-01	2.9	+	Changes in SA and AF
Atrazine	1912-24-9	7.00E+00	7.13E+00	2.11E+01	3.0	+	Changes in SA and AF
Chlordane (technical)	12789-03-6	7.00E+00	4.68E+00	1.38E+01	3.0	+	Changes in SA and AF
DDT	50-29-3	8.00E+00	4.82E+00	1.43E+01	3.0	+	Changes in SA and AF
Diazinon	333-41-5	5.90E+01	2.22E+01	5.50E+01	2.5	+	Changes in SA and AF
Silvex (2,4,5-TP)	93-72-1	5.60E+02	1.95E+02	4.89E+02	2.5	+	Changes in SA and AF
Arsenic*	7440-38-2	1.10E+01	4.35E+00	3.89E+00	0.9	-	Changes in SA, AF, and oral absorption factor
Cadmium*	7440-43-9	1.10E+02	3.23E+01	1.68E+01	0.5	-	Changes in SA, AF, RAFd, and oral slope factor
Mercury	7439-97-6	6.00E-01	9.31E-01	4.63E+01	49.8	+	Changes in SA, AF, and soil-water partition coefficient
Cyanide	57-12-5	5.48E+03	5.02E+02	1.22E+03	2.4	+	Changes in SA and AF

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NIC: Chemical not in CALM

RBTL: Risk-based target level

STARC: Soil target concentration

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative.

Table 28
Changes in Risk-Based Target Levels for Residential Land Use, Soil Type 3 (Clayey)
Departmental MRBCA Technical Guidance
Subsurface Soil (Indoor Inhalation)

Chemical	CAS #	Equivalent CALM (mg/kg)	Subsurface Soil (Indoor Inhalation of Vapors) Soil Type 3 (Clayey)		Ratio of May 2006/Feb. 2005	Why Changed
			RBTL Feb. 2005 (mg/kg)	RBTL May 2006 (mg/kg)		
Carbon tetrachloride	56-23-5	NA	2.64E-01	2.64E-01	1.0	=
1,1-Dichloroethane	75-34-3	NA	3.77E+00	3.77E+00	1.0	=
cis-1,2-Dichloroethylene	156-59-2	NIC	7.01E+00	7.01E+00	1.0	=
1,2-Dichloropropane	78-87-5	NA	1.22E+00	1.22E+00	1.0	=
1,3-Dichloropropene	542-75-6	NA	8.09E-01	8.09E-01	1.0	=
1,4-Dioxane	123-91-1	NA	1.67E+02	1.67E+02	1.0	=
Methyl ethyl ketone	78-93-3	NA	2.52E+04	2.52E+04	1.0	=
Methylene chloride	75-09-2	NA	1.47E+01	1.47E+01	1.0	=
Tetrachloroethylene	127-18-4	NA	2.14E+00	1.02E+00	0.5	- Change in inhalation slope factor
1,1,1-Trichloroethane	71-55-6	NA	2.37E+02	2.37E+02	1.0	=
Trichloroethylene	79-01-6	NA	5.04E+00	5.04E+00	1.0	=
Vinyl chloride	75-01-4	NA	1.14E-01	1.14E-01	1.0	=
Bis(2-ethylhexyl)phthalate	117-81-7	NA	1.45E+10	2.22E+09	0.2	- Change in inhalation slope factor
1,2-Dibromo-3-chloropropane	96-12-8	NA	4.15E+01	4.15E+01	1.0	=
Ethylene glycol	107-21-1	NA	4.60E+04	4.60E+04	1.0	=
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	5.13E+01	5.13E+01	1.0	=
3-Nitroaniline	99-09-2	NIC	3.87E+02	4.06E+02	1.05	+ Change in inhalation reference dose
Pentachlorophenol	87-86-5	NA	4.41E+04	4.41E+04	1.0	=
Polychlorinated biphenyls (PCBs)	1336-36-3	NA	4.28E+03	4.28E+03	1.0	=
alpha-Hexachlorocyclohexane	319-84-6	NA	1.01E+02	1.01E+02	1.0	=
Atrazine	1912-24-9	NA	3.32E+03	3.32E+03	1.0	=
Chlordane (technical)	12789-03-6	NA	7.53E+04	7.53E+04	1.0	=
DDT	50-29-3	NA	5.55E+06	5.55E+06	1.0	=
Diazinon	333-41-5	NA	8.40E+03	8.40E+03	1.0	=
Silvex (2,4,5-TP)	93-72-1	NA	2.03E+04	2.03E+04	1.0	=
Arsenic*	7440-38-2	NA	NA	NA	NA	NA
Cadmium*	7440-43-9	NA	NA	NA	NA	NA
Mercury	7439-97-6	NA	3.43E-02	7.11E+00	207	+ Change in soil-water partition coefficient
Cyanide	57-12-5	NA	NA	NA	NA	NA

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NA: Not available

NIC: Chemical not in CALM

RBTL: Risk-based target level

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

=: May 2006 value is same as February 2005 value.

Table 29
Changes in Risk-Based Target Levels for Residential Land Use, Soil Type 3 (Clayey)
Departmental MRBCA Technical Guidance
Groundwater (Indoor Inhalation)

Chemical	CAS #	Equivalent CALM (mg/L)	Groundwater (Indoor Inhalation of Vapors) Soil Type 3 (Clayey)		Ratio of May 2006/Feb. 2005	Why Changed
			RBTL Feb. 2005 (mg/L)	RBTL May 2006 (mg/L)		
Carbon tetrachloride	56-23-5	NA	2.08E-01	2.08E-01	1.0	=
1,1-Dichloroethane	75-34-3	NA	1.08E+01	1.08E+01	1.0	=
cis-1,2-Dichloroethylene	156-59-2	NIC	1.94E+01	1.94E+01	1.0	=
1,2-Dichloropropane	78-87-5	NA	3.04E+00	3.04E+00	1.0	=
1,3-Dichloropropene	542-75-6	NA	1.66E+00	1.66E+00	1.0	=
1,4-Dioxane	123-91-1	NA	7.00E+02	7.00E+02	1.0	=
Methyl ethyl ketone	78-93-3	NA	1.53E+05	1.53E+05	1.0	=
Methylene chloride	75-09-2	NA	6.83E+01	6.83E+01	1.0	=
Tetrachloroethylene	127-18-4	NA	1.95E+00	9.28E-01	0.5	- Change in inhalation slope factor
1,1,1-Trichloroethane	71-55-6	NA	2.81E+02	2.81E+02	1.0	=
Trichloroethylene	79-01-6	NA	4.49E+00	4.49E+00	1.0	=
Vinyl chloride	75-01-4	NA	2.97E-01	2.97E-01	1.0	=
Bis(2-ethylhexyl)phthalate	117-81-7	NA	1.62E+05	2.49E+04	0.2	- Change in inhalation slope factor
1,2-Dibromo-3-chloropropane	96-12-8	NA	1.36E+02	1.36E+02	1.0	=
Ethylene glycol	107-21-1	NA	2.84E+05	2.84E+05	1.0	=
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	3.71E+02	3.71E+02	1.0	=
3-Nitroaniline	99-09-2	NIC	1.04E+03	1.09E+03	1.05	+ Change in inhalation reference dose
Pentachlorophenol	87-86-5	NA	1.21E+04	1.21E+04	1.0	=
Polychlorinated biphenyls (PCBs)	1336-36-3	NA	2.35E+00	2.35E+00	1.0	=
alpha-Hexachlorocyclohexane	319-84-6	NA	1.36E+01	1.36E+01	1.0	=
Atrazine	1912-24-9	NA	1.09E+03	1.09E+03	1.0	=
Chlordane (technical)	12789-03-6	NA	1.06E+02	1.06E+02	1.0	=
DDT	50-29-3	NA	3.57E+02	3.57E+02	1.0	=
Diazinon	333-41-5	NA	5.62E+03	5.62E+03	1.0	=
Silvex (2,4,5-TP)	93-72-1	NA	4.31E+04	4.31E+04	1.0	=
Arsenic*	7440-38-2	NA	NA	NA	NA	NA
Cadmium*	7440-43-9	NA	NA	NA	NA	NA
Mercury	7439-97-6	NA	1.45E-01	1.45E-01	1.0	=
Cyanide	57-12-5	NA	NA	NA	NA	NA

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NA: Not available

NIC: Chemical not in CALM

RBTL: Risk-based target level

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

=: May 2006 value is same as February 2005 value.

Table 30
Changes in Risk-Based Target Levels for Residential Land Use, Soil Type 3 (Clayey)
Departmental MRBCA Technical Guidance
Groundwater (Dermal Contact)

Chemical	CAS #	Equivalent CALM (mg/L)	Groundwater (Dermal Contact) Soil Type 3 (Clayey)		Ratio of May 2006/Feb. 2005	Why Changed
			RBTL Feb. 2005 (mg/L)	RBTL May 2006 (mg/L)		
Carbon tetrachloride	56-23-5	NA	1.06E-01	4.69E-02	0.4	- Adoption of RAGS Part E
1,1-Dichloroethane	75-34-3	NA	5.77E+00	3.53E+00	0.6	- Adoption of RAGS Part E
cis-1,2-Dichloroethylene	156-59-2	NIC	4.82E+00	4.22E+00	0.9	- Adoption of RAGS Part E
1,2-Dichloropropane	78-87-5	NA	5.21E-01	4.21E-01	0.8	- Adoption of RAGS Part E
1,3-Dichloropropene	542-75-6	NA	5.13E-01	2.99E-01	0.6	- Adoption of RAGS Part E
1,4-Dioxane	123-91-1	NA	6.07E+01	3.93E+01	0.6	- Adoption of RAGS Part E
Methyl ethyl ketone	78-93-3	NA	2.31E+03	2.27E+03	0.98	- Adoption of RAGS Part E
Methylene chloride	75-09-2	NA	8.40E+00	5.54E+00	0.7	- Adoption of RAGS Part E
Tetrachloroethylene	127-18-4	NA	1.28E-01	5.06E-03	0.04	- Adoption of RAGS Part E and change in deraml slope factor
1,1,1-Trichloroethane	71-55-6	NA	7.95E+01	5.64E+01	0.7	- Adoption of RAGS Part E
Trichloroethylene	79-01-6	NA	1.41E+00	7.22E-01	0.5	- Adoption of RAGS Part E
Vinyl chloride	75-01-4	NA	2.81E-02	2.06E-02	0.7	- Adoption of RAGS Part E
Bis(2-ethylhexyl)phthalate	117-81-7	NA	6.30E-01	7.52E-02	0.1	- Adoption of RAGS Part E
1,2-Dibromo-3-chloropropane	96-12-8	NA	3.56E-02	9.82E-03	0.3	- Adoption of RAGS Part E
Ethylene glycol	107-21-1	NA	6.43E+04	6.62E+04	1.03	+ Adoption of RAGS Part E
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	2.38E+00	5.56E-02	0.02	- Adoption of RAGS Part E and change in dermal reference dose
3-Nitroaniline**	99-09-2	NIC	3.53E-01	2.45E-01	0.7	- Adoption of RAGS Part E
Pentachlorophenol	87-86-5	NA	4.71E-03	1.12E-03	0.2	- Adoption of RAGS Part E
Polychlorinated biphenyls (PCBs)	1336-36-3	NA	3.24E-04	6.34E-05	0.2	- Adoption of RAGS Part E
alpha-Hexachlorocyclohexane	319-84-6	NA	1.45E-03	2.90E-04	0.2	- Adoption of RAGS Part E
Atrazine	1912-24-9	NA	1.34E-01	4.23E-02	0.3	- Adoption of RAGS Part E
Chlordane (technical)	12789-03-6	NA	3.45E-03	5.37E-04	0.2	- Adoption of RAGS Part E
DDT	50-29-3	NA	2.40E-03	4.14E-04	0.2	- Adoption of RAGS Part E
Diazinon	333-41-5	NA	2.99E-01	7.71E-02	0.3	- Adoption of RAGS Part E
Silvex (2,4,5-TP)	93-72-1	NA	2.25E+00	7.02E-01	0.3	- Adoption of RAGS Part E
Arsenic*	7440-38-2	NA	NA	1.58E-01	NA	NA Adoption of RAGS Part E
Cadmium*	7440-43-9	NA	NA	6.25E-01	NA	NA Adoption of RAGS Part E
Mercury	7439-97-6	NA	NA	NA	NA	NA
Cyanide	57-12-5	NA	7.39E+01	1.12E+02	1.5	+ Adoption of RAGS Part E and change in skin surface area

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NA: Not available

NIC: Chemical not in CALM

RAGS: Risk assessment guidance for superfund

RBTL: Risk-based target level

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

**: February 2005 value was in error. Therefore, revised February 2005 value is shown.

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

Table 31
Changes in Risk-Based Target Levels for Residential Land Use, Soil Type 3 (Clayey)
Departmental MRBCA Technical Guidance
Groundwater (Domestic Water Use)

Chemical	CAS #	Equivalent CALM (mg/L)	Groundwater (Domestic Water Use) Soil Type 3 (Clayey)		Ratio of May 2006/Feb. 2005	Why Changed
			RBTL Feb. 2005 (mg/L)	RBTL May 2006 (mg/L)		
Carbon tetrachloride	56-23-5	NA	5.00E-03	5.00E-03	1.0	=
1,1-Dichloroethane	75-34-3	NA	2.52E-02	2.49E-02	0.99	-
cis-1,2-Dichloroethylene	156-59-2	NIC	7.00E-02	7.00E-02	1.0	=
1,2-Dichloropropane	78-87-5	NA	5.00E-03	5.00E-03	1.0	=
1,3-Dichloropropene	542-75-6	NA	4.41E-03	4.31E-03	0.98	-
1,4-Dioxane**	123-91-1	NA	6.11E-02	6.10E-02	0.998	-
Methyl ethyl ketone	78-93-3	NA	3.65E+00	3.64E+00	0.998	-
Methylene chloride	75-09-2	NA	5.00E-03	5.00E-03	1.0	=
Tetrachloroethylene	127-18-4	NA	5.00E-03	5.00E-03	1.0	=
1,1,1-Trichloroethane	71-55-6	NA	2.00E-01	2.00E-01	1.0	=
Trichloroethylene	79-01-6	NA	5.00E-03	5.00E-03	1.0	=
Vinyl chloride	75-01-4	NA	2.00E-03	2.00E-03	1.0	=
Bis(2-ethylhexyl)phthalate	117-81-7	NA	6.00E-03	6.00E-03	1.0	=
1,2-Dibromo-3-chloropropane	96-12-8	NA	2.00E-04	2.00E-04	1.0	=
Ethylene glycol**	107-21-1	NA	3.13E+01	3.13E+01	0.999	-
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	3.13E-02	1.51E-03	0.05	-
3-Nitroaniline**	99-09-2	NIC	4.69E-03	4.57E-03	0.97	-
Pentachlorophenol	87-86-5	NA	1.00E-03	1.00E-03	1.0	=
Polychlorinated biphenyls (PCBs)	1336-36-3	NA	5.00E-04	5.00E-04	1.0	=
alpha-Hexachlorocyclohexane	319-84-6	NA	1.07E-04	6.88E-05	0.6	-
Atrazine	1912-24-9	NA	3.00E-03	3.00E-03	1.0	=
Chlordane (technical)	12789-03-6	NA	1.92E-03	3.02E-04	0.2	-
DDT	50-29-3	NA	1.98E-03	2.42E-04	0.1	-
Diazinon	333-41-5	NA	1.41E-02	1.13E-02	0.8	-
Silvex (2,4,5-TP)	93-72-1	NA	5.00E-02	5.00E-02	1.0	=
Arsenic*	7440-38-2	NA	1.00E-02	1.00E-02	1.0	=
Cadmium*	7440-43-9	NA	5.00E-03	5.00E-03	1.0	=
Mercury	7439-97-6	NA	NA	NA	NA	NA
Cyanide	57-12-5	NA	3.13E-01	3.12E-01	0.998	-

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NA: Not available

NIC: Chemical not in CALM

RAGS: Risk assessment guidance for superfund

RBTL: Risk-based target level

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

**: February 2005 value was in error. Therefore, revised February 2005 value is shown.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

=: May 2006 value is same as February 2005 value.

Table 32
Changes in Risk-Based Target Levels for Non-residential Land Use, Soil Type 3 (Clayey)
Departmental MRBCA Technical Guidance
Surficial Soil (Ingestion, Inhalation, and Dermal Contact)

Chemical	CAS #	Equivalent CALM (STARC Scenario B) (mg/kg)	Surficial Soil (Ingestion, Inhalation, and Dermal Contact) Soil Type 3 (Clayey)		Ratio of May 2006/Feb. 2005	Why Changed	
			RBTL Feb. 2005 (mg/kg)	RBTL May 2006 (mg/kg)			
Carbon tetrachloride	56-23-5	3.00E+00	1.94E+01	2.08E+02	10.7	+	Changes in skin surface area (SA), soil adherence factor (AF), and dermal absorption factor (RAFd)
1,1-Dichloroethane	75-34-3	NIC	2.75E+02	4.42E+03	16.0	+	Changes in SA, AF, RAFd, and inhalation reference dose
cis-1,2-Dichloroethylene	156-59-2	1.20E+03	6.24E+02	8.97E+03	14.4	+	Changes in SA, AF, and RAFd
1,2-Dichloropropane	78-87-5	1.40E+01	5.63E+01	6.98E+02	12.4	+	Changes in SA, AF, and RAFd
1,3-Dichloropropene	542-75-6	1.00E+00	3.73E+01	2.81E+02	7.5	+	Changes in SA, AF, and RAFd
1,4-Dioxane	123-91-1	2.10E+02	3.31E+02	1.30E+03	3.9	+	Changes in SA and AF
Methyl ethyl ketone	78-93-3	1.00E+04	9.28E+04	5.79E+05	6.2	+	Changes in SA, AF, and RAFd
Methylene chloride	75-09-2	7.10E+01	4.58E+02	3.70E+03	8.1	+	Changes in SA, AF, and RAFd
Tetrachloroethylene	127-18-4	5.50E+01	6.75E+01	5.27E+01	0.8	-	Changes in SA, AF, RAFd, and oral/inhalation slope factors
1,1,1-Trichloroethane	71-55-6	1.20E+03	2.40E+04	2.69E+05	11.2	+	Changes in SA, AF, and RAFd
Trichloroethylene	79-01-6	5.60E+01	2.00E+02	2.05E+03	10.3	+	Changes in SA, AF, and RAFd
Vinyl chloride	75-01-4	4.00E-01	3.40E+00	2.04E+01	6.0	+	Changes in SA, AF, and RAFd
Bis(2-ethylhexyl)phthalate	117-81-7	5.70E+02	3.58E+02	1.23E+03	3.4	+	Changes in SA and AF
1,2-Dibromo-3-chloropropane	96-12-8	2.00E+00	3.43E+00	1.14E+01	3.3	+	Changes in SA and AF
Ethylene glycol	107-21-1	1.24E+05	1.51E+05	4.99E+05	3.3	+	Changes in SA and AF
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	1.43E+02	5.61E+01	0.4	-	Changes in SA, AF, and oral reference dose
3-Nitroaniline	99-09-2	NIC	5.14E+01	1.70E+02	3.3	+	Changes in SA and AF
Pentachlorophenol	87-86-5	9.00E+00	1.86E+01	9.00E+01	4.8	+	Changes in SA and AF
Polychlorinated biphenyls (PCBs)	1336-36-3	9.00E-01	1.88E+00	7.40E+00	3.9	+	Changes in SA and AF
alpha-Hexachlorocyclohexane	319-84-6	4.00E-01	7.85E-01	2.62E+00	3.3	+	Changes in SA and AF
Atrazine	1912-24-9	1.00E+01	2.18E+01	7.49E+01	3.4	+	Changes in SA and AF
Chlordane (technical)	12789-03-6	1.00E+01	1.43E+01	4.89E+01	3.4	+	Changes in SA and AF
DDT	50-29-3	1.20E+01	1.47E+01	5.07E+01	3.4	+	Changes in SA and AF
Diazinon	333-41-5	5.90E+01	1.58E+02	5.54E+02	3.5	+	Changes in SA and AF
Silvex (2,4,5-TP)	93-72-1	7.90E+02	1.39E+03	4.93E+03	3.5	+	Changes in SA and AF
Arsenic*	7440-38-2	1.10E+01	1.91E+01	1.59E+01	0.8	-	Changes in SA, AF, and oral absorption factor
Cadmium*	7440-43-9	1.50E+02	3.47E+02	7.48E+01	0.2	-	Changes in SA, AF, RAFd, and oral slope factor
Mercury	7439-97-6	8.00E-01	6.30E+00	6.30E+02	100	+	Changes in SA, AF, and soil-water partition coefficient
Cyanide	57-12-5	7.67E+03	3.58E+03	1.23E+04	3.4	+	Changes in SA and AF

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NIC: Chemical not in CALM

RBTL: Risk-based target level

STARC: Soil target concentration

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative.

=: May 2006 value is same as February 2005 value.

May 2006

RAM Group, Inc. (5114)

Table 33
Changes in Risk-Based Target Levels for Non-residential Land Use, Soil Type 3 (Clayey)
Departmental MRBCA Technical Guidance
Subsurface Soil (Indoor Inhalation)

Chemical	CAS #	Equivalent CALM (mg/kg)	Subsurface Soil (Indoor Inhalation of Vapors) Soil Type 3 (Clayey)		Ratio of May 2006/Feb. 2005	Why Changed
			RBTL Feb. 2005 (mg/kg)	RBTL May 2006 (mg/kg)		
Carbon tetrachloride	56-23-5	NA	1.38E+00	1.38E+00	1.0	=
1,1-Dichloroethane	75-34-3	NA	1.98E+01	1.98E+01	1.0	=
cis-1,2-Dichloroethylene	156-59-2	NIC	5.64E+01	5.64E+01	1.0	=
1,2-Dichloropropane	78-87-5	NA	6.86E+00	6.67E+00	0.97	- Change in inhalation slope factor
1,3-Dichloropropene	542-75-6	NA	4.24E+00	4.24E+00	1.0	=
1,4-Dioxane	123-91-1	NA	8.76E+02	8.76E+02	1.0	=
Methyl ethyl ketone	78-93-3	NA	2.03E+05	2.03E+05	1.0	=
Methylene chloride	75-09-2	NA	7.70E+01	7.70E+01	1.0	=
Tetrachloroethylene	127-18-4	NA	1.12E+01	5.34E+00	0.5	- Change in inhalation slope factor
1,1,1-Trichloroethane	71-55-6	NA	1.90E+03	1.90E+03	1.0	=
Trichloroethylene	79-01-6	NA	2.64E+01	2.64E+01	1.0	=
Vinyl chloride	75-01-4	NA	5.99E-01	5.99E-01	1.0	=
Bis(2-ethylhexyl)phthalate	117-81-7	NA	1.17E+11	1.17E+10	0.1	- Change in inhalation slope factor
1,2-Dibromo-3-chloropropane	96-12-8	NA	2.17E+02	2.17E+02	1.0	=
Ethylene glycol	107-21-1	NA	3.70E+05	3.70E+05	1.0	=
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	4.11E+02	4.11E+02	1.0	=
3-Nitroaniline	99-09-2	NIC	3.11E+03	3.26E+03	1.05	+ Change in inhalation reference dose
Pentachlorophenol	87-86-5	NA	2.31E+05	2.31E+05	1.0	=
Polychlorinated biphenyls (PCBs)	1336-36-3	NA	2.24E+04	2.24E+04	1.0	=
alpha-Hexachlorocyclohexane	319-84-6	NA	5.29E+02	5.29E+02	1.0	=
Atrazine	1912-24-9	NA	1.74E+04	1.74E+04	1.0	=
Chlordane (technical)	12789-03-6	NA	3.95E+05	3.95E+05	1.0	=
DDT	50-29-3	NA	2.91E+07	2.91E+07	1.0	=
Diazinon	333-41-5	NA	6.75E+04	6.75E+04	1.0	=
Silvex (2,4,5-TP)	93-72-1	NA	1.63E+05	1.63E+05	1.0	=
Arsenic*	7440-38-2	NA	NA	NA	NA	NA
Cadmium*	7440-43-9	NA	NA	NA	NA	NA
Mercury	7439-97-6	NA	2.76E-01	5.72E+01	207	+ Change in soil-water partition coefficient
Cyanide	57-12-5	NA	NA	NA	NA	NA

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NA: Not available

NIC: Chemical not in CALM

RBTL: Risk-based target level

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

=: May 2006 value is same as February 2005 value.

Table 34
Changes in Risk-Based Target Levels for Non-residential Land Use, Soil Type 3 (Clayey)
Departmental MRBCA Technical Guidance
Groundwater (Indoor Inhalation)

Chemical	CAS #	Equivalent CALM (mg/L)	Groundwater (Indoor Inhalation of Vapors) Soil Type 3 (Clayey)		Ratio of May 2006/Feb. 2005	Why Changed
			RBTL Feb. 2005 (mg/L)	RBTL May 2006 (mg/L)		
Carbon tetrachloride	56-23-5	NA	1.09E+00	1.09E+00	1.0	=
1,1-Dichloroethane	75-34-3	NA	5.68E+01	5.68E+01	1.0	=
cis-1,2-Dichloroethylene	156-59-2	NIC	1.56E+02	1.56E+02	1.0	=
1,2-Dichloropropane	78-87-5	NA	1.71E+01	1.66E+01	0.97	- Change in inhalation slope factor
1,3-Dichloropropene	542-75-6	NA	8.68E+00	8.68E+00	1.0	=
1,4-Dioxane	123-91-1	NA	3.67E+03	3.67E+03	1.0	=
Methyl ethyl ketone	78-93-3	NA	1.23E+06	1.23E+06	1.0	=
Methylene chloride	75-09-2	NA	3.58E+02	3.58E+02	1.0	=
Tetrachloroethylene	127-18-4	NA	1.02E+01	4.86E+00	0.5	- Change in inhalation slope factor
1,1,1-Trichloroethane	71-55-6	NA	2.26E+03	2.26E+03	1.0	=
Trichloroethylene	79-01-6	NA	2.36E+01	2.36E+01	1.0	=
Vinyl chloride	75-01-4	NA	1.55E+00	1.55E+00	1.0	=
Bis(2-ethylhexyl)phthalate	117-81-7	NA	1.30E+06	1.30E+05	0.1	- Change in inhalation slope factor
1,2-Dibromo-3-chloropropane	96-12-8	NA	7.13E+02	7.13E+02	1.0	=
Ethylene glycol	107-21-1	NA	2.28E+06	2.28E+06	1.0	=
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	2.97E+03	2.97E+03	1.0	=
3-Nitroaniline	99-09-2	NIC	8.37E+03	8.78E+03	1.05	+ Change in inhalation reference dose
Pentachlorophenol	87-86-5	NA	6.34E+04	6.34E+04	1.0	=
Polychlorinated biphenyls (PCBs)	1336-36-3	NA	1.23E+01	1.23E+01	1.0	=
alpha-Hexachlorocyclohexane	319-84-6	NA	7.13E+01	7.13E+01	1.0	=
Atrazine	1912-24-9	NA	5.73E+03	5.73E+03	1.0	=
Chlordane (technical)	12789-03-6	NA	5.56E+02	5.56E+02	1.0	=
DDT	50-29-3	NA	1.87E+03	1.87E+03	1.0	=
Diazinon	333-41-5	NA	4.52E+04	4.52E+04	1.0	=
Silvex (2,4,5-TP)	93-72-1	NA	3.47E+05	3.47E+05	1.0	=
Arsenic*	7440-38-2	NA	NA	NA	NA	NA
Cadmium*	7440-43-9	NA	NA	NA	NA	NA
Mercury	7439-97-6	NA	1.16E+00	1.16E+00	1.0	=
Cyanide	57-12-5	NA	NA	NA	NA	NA

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NA: Not available

NIC: Chemical not in CALM

RBTL: Risk-based target level

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

=: May 2006 value is same as February 2005 value.

Table 35
Changes in Risk-Based Target Levels for Non-residential Land Use, Soil Type 3 (Clayey)
Departmental MRBCA Technical Guidance
Groundwater (Dermal Contact)

Chemical	CAS #	Equivalent CALM (mg/L)	Groundwater (Dermal Contact) Soil Type 3 (Clayey)		Ratio of May 2006/Feb. 2005	Why Changed
			RBTL Feb. 2005 (mg/L)	RBTL May 2006 (mg/L)		
Carbon tetrachloride	56-23-5	NA	2.92E-01	1.71E-01	0.6	- Adoption of RAGS Part E
1,1-Dichloroethane	75-34-3	NA	1.59E+01	1.29E+01	0.8	- Adoption of RAGS Part E
cis-1,2-Dichloroethylene	156-59-2	NIC	2.83E+01	2.34E+01	0.8	- Adoption of RAGS Part E
1,2-Dichloropropane	78-87-5	NA	2.16E+00	1.65E+00	0.8	- Adoption of RAGS Part E
1,3-Dichloropropene	542-75-6	NA	1.41E+00	1.09E+00	0.8	- Adoption of RAGS Part E
1,4-Dioxane	123-91-1	NA	1.67E+02	1.44E+02	0.9	- Adoption of RAGS Part E
Methyl ethyl ketone	78-93-3	NA	1.36E+04	1.26E+04	0.9	- Adoption of RAGS Part E
Methylene chloride	75-09-2	NA	2.31E+01	2.02E+01	0.9	- Adoption of RAGS Part E
Tetrachloroethylene	127-18-4	NA	3.54E-01	1.85E-02	0.1	- Adoption of RAGS Part E and change in dermal slope factor
1,1,1-Trichloroethane	71-55-6	NA	4.67E+02	3.13E+02	0.7	- Adoption of RAGS Part E
Trichloroethylene	79-01-6	NA	3.89E+00	2.64E+00	0.7	- Adoption of RAGS Part E
Vinyl chloride	75-01-4	NA	7.74E-02	7.53E-02	1.0	- Adoption of RAGS Part E
Bis(2-ethylhexyl)phthalate	117-81-7	NA	1.73E+00	2.75E-01	0.2	- Adoption of RAGS Part E
1,2-Dibromo-3-chloropropane	96-12-8	NA	9.81E-02	3.59E-02	0.4	- Adoption of RAGS Part E
Ethylene glycol	107-21-1	NA	3.77E+05	3.67E+05	1.0	- Adoption of RAGS Part E
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	1.40E+01	3.08E-01	0.02	- Adoption of RAGS Part E and change in dermal reference dose
3-Nitroaniline**	99-09-2	NIC	2.07E+00	1.36E+00	0.7	- Adoption of RAGS Part E
Pentachlorophenol	87-86-5	NA	1.30E-02	4.08E-03	0.3	- Adoption of RAGS Part E
Polychlorinated biphenyls (PCBs)	1336-36-3	NA	8.91E-04	2.31E-04	0.3	- Adoption of RAGS Part E
alpha-Hexachlorocyclohexane	319-84-6	NA	3.99E-03	1.06E-03	0.3	- Adoption of RAGS Part E
Atrazine	1912-24-9	NA	3.70E-01	1.55E-01	0.4	- Adoption of RAGS Part E
Chlordane (technical)	12789-03-6	NA	9.50E-03	1.96E-03	0.2	- Adoption of RAGS Part E
DDT	50-29-3	NA	6.61E-03	1.51E-03	0.2	- Adoption of RAGS Part E
Diazinon	333-41-5	NA	1.76E+00	4.27E-01	0.2	- Adoption of RAGS Part E
Silvex (2,4,5-TP)	93-72-1	NA	1.32E+01	3.89E+00	0.3	- Adoption of RAGS Part E
Arsenic*	7440-38-2	NA	NA	5.78E-01	NA	Adoption of RAGS Part E
Cadmium*	7440-43-9	NA	NA	2.28E+00	NA	Adoption of RAGS Part E
Mercury	7439-97-6	NA	NA	NA	NA	
Cyanide	57-12-5	NA	4.34E+02	6.19E+02	1.4	+ Adoption of RAGS Part E and change in skin surface area

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NA: Not available

NIC: Chemical not in CALM

RAGS: Risk assessment guidance for superfund

RBTL: Risk-based target level

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

**: February 2005 value was in error. Therefore, revised February 2005 value is shown.

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

Table 36
Changes in Risk-Based Target Levels for Construction Worker, Soil Type 3 (Clayey)
Departmental MRBCA Technical Guidance
Soil (Ingestion, Inhalation, and Dermal Contact)

Chemical	CAS #	Equivalent CALM (mg/kg)	Soil (Ingestion, Inhalation, and Dermal Contact) Soil Type 3 (Clayey)		Ratio of May 2006/Feb. 2005	Why Changed	
			RBTL Feb. 2005 (mg/kg)	RBTL May 2006 (mg/kg)			
Carbon tetrachloride	56-23-5	NA	1.29E+02	1.18E+03	9.1	+	Changes in skin SA, soil AF, IR, and dermal absorption factor (RAFd)
1,1-Dichloroethane	75-34-3	NA	2.66E+03	3.48E+03	1.3	+	Changes in SA, AF, RAFd, and inhalation reference dose (RfDi)
cis-1,2-Dichloroethylene	156-59-2	NIC	2.53E+02	2.31E+03	9.2	+	Changes in SA, AF, and RAFd
1,2-Dichloropropane	78-87-5	NA	3.51E+01	2.64E+02	7.5	+	Changes in skin SA, soil AF, IR, RAFd, and RfDi
1,3-Dichloropropene	542-75-6	NA	9.27E+01	1.42E+03	15.3	+	Changes in skin SA, soil AF, IR, RAFd, and RfDi
1,4-Dioxane	123-91-1	NA	6.67E+03	6.10E+03	0.9	-	Changes in SA and AF
Methyl ethyl ketone	78-93-3	NA	1.16E+05	2.97E+05	2.6	+	Changes in SA, AF, and RAFd
Methylene chloride	75-09-2	NA	2.50E+03	2.46E+04	9.9	+	Changes in SA, AF, and RAFd
Tetrachloroethylene	127-18-4	NA	1.27E+03	2.56E+03	2.0	+	Changes in SA, AF, IR, RAFd, and oral/inhalation/dermal slope factors
1,1,1-Trichloroethane	71-55-6	NA	1.13E+04	1.32E+05	11.7	+	Changes in SA, AF, and RAFd
Trichloroethylene	79-01-6	NA	2.60E+03	2.16E+04	8.3	+	Changes in SA, AF, and RAFd
Vinyl chloride	75-01-4	NA	1.13E+02	1.14E+03	10.1	+	Changes in SA, AF, and RAFd
Bis(2-ethylhexyl)phthalate	117-81-7	NA	9.93E+03	2.85E+04	2.9	+	Changes in SA and AF
1,2-Dibromo-3-chloropropane	96-12-8	NA	2.09E+01	2.73E+01	1.3	+	Change in SA, AF, IR, and RfDi
Ethylene glycol	107-21-1	NA	6.78E+04	4.42E+04	0.7	-	Changes in SA and AF
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	6.23E+01	3.19E+01	0.5	-	Changes in SA, AF, and oral/dermal reference doses
3-Nitroaniline	99-09-2	NIC	1.03E+02	1.44E+02	1.4	+	Changes in SA, AF, and RfDi
Pentachlorophenol	87-86-5	NA	1.29E+03	4.77E+03	3.7	+	Changes in SA and AF
Polychlorinated biphenyls (PCBs)	1336-36-3	NA	1.29E+02	3.94E+02	3.0	+	Changes in SA and AF
alpha-Hexachlorocyclohexane	319-84-6	NA	4.89E+01	9.92E+01	2.0	+	Changes in SA and AF
Atrazine	1912-24-9	NA	1.51E+03	4.34E+03	2.9	+	Changes in SA and AF
Chlordane (technical)	12789-03-6	NA	2.37E+02	5.79E+02	2.4	+	Changes in SA and AF
DDT	50-29-3	NA	2.48E+02	7.13E+02	2.9	+	Changes in SA and AF
Diazinon	333-41-5	NA	3.85E+02	1.28E+03	3.3	+	Changes in SA and AF
Silvex (2,4,5-TP)	93-72-1	NA	3.03E+03	1.14E+04	3.8	+	Changes in SA and AF
Arsenic*	7440-38-2	NA	8.54E+02	6.54E+02	0.8	-	Changes in SA, AF, and oral absorption factor
Cadmium*	7440-43-9	NA	9.65E+02	2.81E+03	2.9	+	Changes in SA, AF, RAFd, and oral slope factor
Mercury	7439-97-6	NA	1.72E+00	2.16E+01	12.5	+	Changes in SA, AF, and soil-water partition coefficient
Cyanide	57-12-5	NA	9.93E+03	2.85E+04	2.9	+	Changes in SA and AF

Notes:

AF: Adherence factor

CALM: Cleanup levels for Missouri

IR: Inhalation rate

MRBCA: Missouri risk-based corrective action

NA: Not available

NIC: Chemical not in CALM

RBTL: Risk-based target level

SA: Skin surface area

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

Table 37
Changes in Risk-Based Target Levels for Construction Worker, Soil Type 3 (Clayey)
Departmental MRBCA Technical Guidance
Groundwater (Outdoor Inhalation)

Chemical	CAS #	Equivalent CALM (mg/L)	Groundwater (Outdoor Inhalation of Vapors) Soil Type 3 (Clayey)		Ratio of May 2006/Feb. 2005	Why Changed
			RBTL Feb. 2005 (mg/L)	RBTL May 2006 (mg/L)		
Carbon tetrachloride	56-23-5	NA	7.44E+03	4.59E+03	0.6	- Change in inhalation rate (IR)
1,1-Dichloroethane	75-34-3	NA	3.10E+05	2.14E+04	0.1	- Changes in IR and inhalation reference dose (RfDi)
cis-1,2-Dichloroethylene	156-59-2	NIC	3.03E+04	1.87E+04	0.6	- Change in IR
1,2-Dichloropropane	78-87-5	NA	4.65E+03	2.87E+03	0.6	- Change in IR
1,3-Dichloropropene	542-75-6	NA	7.05E+03	4.35E+03	0.6	- Changes in IR and RfDi
1,4-Dioxane	123-91-1	NA	6.78E+06	4.18E+06	0.6	- Change in IR
Methyl ethyl ketone	78-93-3	NA	9.49E+07	5.86E+07	0.6	- Change in IR
Methylene chloride	75-09-2	NA	4.13E+05	2.55E+05	0.6	- Change in IR
Tetrachloroethylene	127-18-4	NA	7.69E+04	2.26E+04	0.3	- Changes in IR and inhalation slope factor
1,1,1-Trichloroethane	71-55-6	NA	6.76E+05	4.17E+05	0.6	- Change in IR
Trichloroethylene	79-01-6	NA	1.61E+05	9.92E+04	0.6	- Change in IR
Vinyl chloride	75-01-4	NA	1.34E+04	8.27E+03	0.6	- Change in IR
Bis(2-ethylhexyl)phthalate	117-81-7	NA	9.52E+07	5.87E+07	0.6	- Change in IR
1,2-Dibromo-3-chloropropane	96-12-8	NA	1.78E+05	9.18E+04	0.5	- Changes in IR and RfDi
Ethylene glycol	107-21-1	NA	1.67E+08	1.03E+08	0.6	- Change in IR
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	2.16E+05	1.34E+05	0.6	- Change in IR
3-Nitroaniline	99-09-2	NIC	6.10E+05	3.95E+05	0.6	- Changes in IR and RfDi
Pentachlorophenol	87-86-5	NA	8.92E+07	5.51E+07	0.6	- Change in IR
Polychlorinated biphenyls (PCBs)	1336-36-3	NA	2.93E+04	1.81E+04	0.6	- Change in IR
alpha-Hexachlorocyclohexane	319-84-6	NA	5.87E+04	8.05E+04	1.4	+ Changes in IR and RfDi
Atrazine	1912-24-9	NA	1.04E+07	6.45E+06	0.6	- Change in IR
Chlordane (technical)	12789-03-6	NA	1.03E+05	6.35E+04	0.6	- Change in IR
DDT	50-29-3	NA	8.29E+05	5.11E+05	0.6	- Change in IR
Diazinon	333-41-5	NA	3.30E+06	2.03E+06	0.6	- Change in IR
Silvex (2,4,5-TP)	93-72-1	NA	2.53E+07	1.56E+07	0.6	- Change in IR
Arsenic*	7440-38-2	NA	NA	NA	NA	NA
Cadmium*	7440-43-9	NA	NA	NA	NA	NA
Mercury	7439-97-6	NA	2.84E+02	1.75E+02	0.6	- Change in IR
Cyanide	57-12-5	NA	NA	NA	NA	NA

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NA: Not available

NIC: Chemical not in CALM

RBTL: Risk-based target level

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative

Table 38
Changes in Risk-Based Target Levels for Construction Worker, Soil Type 3 (Clayey)
Departmental MRBCA Technical Guidance
Groundwater (Dermal Contact)

Chemical	CAS #	Equivalent CALM (mg/L)	Groundwater (Dermal Contact) Soil Type 3 (Clayey)		Ratio of May 2006/Feb. 2005	Why Changed
			RBTL Feb. 2005 (mg/L)	RBTL May 2006 (mg/L)		
Carbon tetrachloride	56-23-5	NA	2.63E+00	1.55E+00	0.6	- Adoption of RAGS Part E
1,1-Dichloroethane	75-34-3	NA	8.99E+02	7.30E+02	0.8	- Adoption of RAGS Part E
cis-1,2-Dichloroethylene	156-59-2	NIC	7.85E+01	6.50E+01	0.8	- Adoption of RAGS Part E
1,2-Dichloropropane	78-87-5	NA	8.49E+00	6.48E+00	0.8	- Adoption of RAGS Part E
1,3-Dichloropropene	542-75-6	NA	9.80E+01	7.58E+01	0.8	- Adoption of RAGS Part E
1,4-Dioxane	123-91-1	NA	1.16E+04	9.97E+03	0.9	- Adoption of RAGS Part E
Methyl ethyl ketone	78-93-3	NA	3.76E+04	3.50E+04	0.9	- Adoption of RAGS Part E
Methylene chloride	75-09-2	NA	1.03E+03	9.03E+02	0.9	- Adoption of RAGS Part E
Tetrachloroethylene	127-18-4	NA	1.82E+01	1.28E+00	0.1	- Adoption of RAGS Part E and change in dermal slope factor
1,1,1-Trichloroethane	71-55-6	NA	1.30E+03	8.68E+02	0.7	- Adoption of RAGS Part E
Trichloroethylene	79-01-6	NA	2.70E+02	1.83E+02	0.7	- Adoption of RAGS Part E
Vinyl chloride	75-01-4	NA	5.38E+00	5.23E+00	1.0	- Adoption of RAGS Part E
Bis(2-ethylhexyl)phthalate	117-81-7	NA	4.82E+01	7.63E+00	0.2	- Adoption of RAGS Part E
1,2-Dibromo-3-chloropropane	96-12-8	NA	7.77E-01	2.84E-01	0.4	- Adoption of RAGS Part E
Ethylene glycol	107-21-1	NA	1.05E+06	1.02E+06	1.0	- Adoption of RAGS Part E
2-Methyl-4,6-dinitrophenol	534-52-1	NIC	3.89E+01	8.56E-01	0.02	- Adoption of RAGS Part E and change in deraml reference dose
3-Nitroaniline**	99-09-2	NIC	5.75E+00	3.77E+00	0.7	- Adoption of RAGS Part E
Pentachlorophenol	87-86-5	NA	9.01E-01	2.84E-01	0.3	- Adoption of RAGS Part E
Polychlorinated biphenyls (PCBs)	1336-36-3	NA	6.19E-02	1.61E-02	0.3	- Adoption of RAGS Part E
alpha-Hexachlorocyclohexane	319-84-6	NA	2.77E-01	7.36E-02	0.3	- Adoption of RAGS Part E
Atrazine	1912-24-9	NA	2.57E+01	1.07E+01	0.4	- Adoption of RAGS Part E
Chlordane (technical)	12789-03-6	NA	1.65E-01	3.40E-02	0.2	- Adoption of RAGS Part E
DDT	50-29-3	NA	1.12E-01	2.55E-02	0.2	- Adoption of RAGS Part E
Diazinon	333-41-5	NA	4.88E+00	1.19E+00	0.2	- Adoption of RAGS Part E
Silvex (2,4,5-TP)	93-72-1	NA	3.66E+01	1.08E+01	0.3	- Adoption of RAGS Part E
Arsenic*	7440-38-2	NA	NA	2.58E+01	NA	Adoption of RAGS Part E
Cadmium*	7440-43-9	NA	NA	8.60E+01	NA	Adoption of RAGS Part E
Mercury	7439-97-6	NA	NA	NA	NA	
Cyanide	57-12-5	NA	1.20E+03	1.72E+03	1.4	+ Adoption of RAGS Part E and change in skin surface area

Notes:

CALM: Cleanup levels for Missouri

MRBCA: Missouri risk-based corrective action

NA: Not available

NIC: Chemical not in CALM

RAGS: Risk assessment guidance for superfund

RBTL: Risk-based target level

*: Chemicals in Tanks program. RBTLs obtained from Soil Type Dependent Tier 1 RBTLs available at <http://www.dnr.state.mo.us/env/hwp/mrbca/tank-files/all-xls-3-18-05.pdf>

**: February 2005 value was in error. Therefore, revised February 2005 value is shown.

+: May 2006 value is higher than February 2005 value. Therefore, May 2006 value is less conservative.

-: May 2006 value is lower than February 2005 value. Therefore, May 2006 value is more conservative